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NEW HORIZONS IN INDUSTRIAL HEALTH AND WELFARE

PROGRESS IN INDUSTRIAL HEALTH

REAR ADMIRAL JOEL T. BOONE (MC), U.S.N.
Washington, D. C.

This article and the articles by Andrew Fletcher and Boris Stern, which follow, were read in a panel discussion at the Seventh Annual Congress on Industrial Health in Boston, October 1. The Moderator was Dr. William A. Sawyer of Rochester, N. Y.

The progress made in industrial health in the United States over the past few decades has been continuous, although by no means regular and steady. The noteworthy advances that have been made are attributable primarily to the efforts, measures and programs undertaken in individual plants and in certain branches of industry. The value of an overall industrial health program applicable to all industries and occupations in the United States has never been convincingly sold to the public.

Some of the difficulties inherent in such a program are due to disagreement as to the relative responsibilities to the workers of management and organized labor, suspicion as to the motives of any health measures undertaken by management, inadequacy of health education, difficulties in delineating the functions of the medical and applied professions, confusion of "industrial health" with employee "morale and welfare" and, of course, the question of costs and who shall bear them. Nevertheless, the future of industrial health looks bright.

One of the industries in which industrial health progress has been wofully neglected is bituminous coal mining. This industry, which has been described as basic to the industrial economy of the nation, is scattered over twenty-six states, employs about 400,000 miners and is composed of about eight to nine thousand separate operations, ranging from the proverbial shoestring enterprise (the so-called "wagon mine," "truck mine" or "dog-hole") to the very large and integrated captive mine or big-scale operation. It is significant to note that 12 per cent of the mines produce about 72 per cent of the annual tonnage. On the other hand, 46.5 per cent of the mines produce only 2 per cent of the coal. Thus, although there is an extreme range in the size of mining operations, industrial health problems are common throughout the industry.

Certain aspects of the industrial health problems are encompassed in the demands which the labor unions made early this year during the negotiations with management over renewal of the union contract in the soft coal industry which expired March 31. Partly because of the inability of labor and management to agree on issues concerned with the financing and management of funds for medical and hospital care of the workers and for welfare and retirement benefits, the bituminous coal mines were closed down during April and a major part of May. When the negotiators advised the President of the United States that they could not come to an agreement, the President issued an executive order directing that the government technically take over operation of the mines. The responsibility for administering the operation of the mines was placed in the Interior Department, which is the government agency primarily concerned with natural resources.

The Secretary of the Interior, Hon. J. A. Krug, called on Admiral Ben Moreell of the Civil Engineer Corps, United States Navy, who had made a notable record in handling a similar situation in the oil industry last year, to become Federal Coal Mines Administrator. A week after government seizure Secretary Krug, with the assistance of Admiral Moreell, negotiated a contract with the miners' union, which became effective on May 29. Various provisions of this contract deal with health matters, among which is section 5, which reads as follows:

> The Coal Mines Administrator undertakes to have made a comprehensive survey and study of the hospital and medical facilities, medical treatment, sanitary and housing conditions in the coal mining areas. The purpose of this survey will be to determine the character and scope of improvements which should be made to provide the mine workers of the nation with medical, housing and sanitary facilities conforming to recognized American standards.

To carry out the provisions of section 5, the services of the Naval Medical Corps were sought, and Secretary Krug, with the approval of the President of the United States, selected Rear Admiral Joel T. Boone (MC), U.S.N., who was at the time inspector, Medical Department Activities, Pacific Coast, to serve as the director of the medical survey. Admiral Boone, with the assistance of a distinguished officer of the Navy Civil Engineer Corps, Commodore Charles T. Dickeman, began at once to plan and organize the survey.

It was apparent that to investigate all phases of the problem in detail through first-hand inspection of all the eight to nine thousand operating mines, or even of the approximately 3,500 mines, producing more than 50 tons daily, which were under seizure by the Coal Mines Administration, would be a task that could not be completed within a possible period of five or ten years and would therefore lose considerable value through the passage of time. It was decided, therefore to limit the survey to the more important aspects of the study and restrict the first-hand investigations to a percentage of the mines statistically selected by established sampling procedures. Accordingly, about 15 per cent of the mines producing 50,000 tons or more annually were chosen by a random sampling

This in no wise represents the final report of the Director of the Medical Survey.

method, the largest number of mines being chosen in areas where the number of working miners was the greatest, and the least number of mines being selected in areas where the number of working miners was the smallest. Agreement as to the mines selected was sought from management and labor.

Five teams of naval officers were organized to make the field inspections, each team being headed by a medical officer and including an engineer officer and a welfare and recreation officer. Each team, after being briefed on procedure and supplied with the questionnaire forms, was dispatched to one of the five areas into which the Coal Miners Administration had divided the country for administrative purposes. The territory comprising each of the five areas is as follows: Area 1, headquarters at Pittsburgh, comprising coal mining communities of Pennsylvania, northern West Virginia, Ohio and Maryland; area 2, headquarters at Ashland, Ky., comprising Kentucky, southern West Virginia, Virginia, Tennessee and Alabama; area 3, headquarters at Chicago, comprising Illinois, Indiana, Iowa and Michigan; area 4, headquarters at Kansas City, Mo., comprising Kansas, Missouri, Arkansas and Oklahoma, and area 5, headquarters at Denver, comprising all western bituminous coal producing states.

At the same time, in order to provide assurance that the mines selected for study were representative of the industry as a whole and to provide data for checking the accuracy of the information obtained by the field teams, simplified questionnaires were devised and sent to mine union officials and to operators of all mines of which the government had record. The director of the medical survey group and members of the headquarters staff went into the field to establish public relations, publicize the program, enlist the cooperation of agencies interested in the problem and obtain information which could be used in evaluating and interpreting the statistical data acquired by the field teams.

The fact that the survey is industrywide introduces many variable factors of geography, geology, climate, customs, laws and economics. On the other hand, the bituminous coal mining industry provides the advantages of fairly well standardized operating methods and uniform wage rates for employees, which, incidentally, are above the general average for industrial workers. The industry as a whole is highly competitive. Competition for markets exists between individual producers, as in other industries; between different groups of operators operating in different freight-rate zones, and between the industry as a whole and producers of other fuels, such as natural gas and petroleum.

Another pertinent characteristic of the industry is that, unlike manufacturing enterprises, the operator is limited in his selection of site, having to go where the coal seam is located. The coal entrepreneur must bring his equipment, electricity and supplies; he must, except in certain areas, bring in labor, and he must provide housing and other facilities and services at places where the coal lies.

This restricted choice of location has given rise to certain notable differences in the regional nature of coal mining communities. For example, in the Far West and in the southern Appalachian area coal mines are naturally situated away from centers of population, and, accordingly, the condition has given rise to coal "camps" which have become permanent communities. On the other hand, in the Midwestern states of Illinois and Indiana the coal deposits are located near established rural or urban towns or, in recent years, within easy reach from established settlements by motor vehicle and, consequently, no "company towns" exist. In the mineralized zones of Oklahoma and Arkansas underground coal mining has been for some time an irregular and seasonal source of employment, with the workers engaged during the remainder of the year in small farming ventures or in other part time occupations; consequently the miner population, rather than residing in close proximity to the mine, is scattered within a considerable radius. In the northern Appalachian area, particularly in Pennsylvania, the establishment of numerous cities, towns and other settlements resulting from the steady growth of industry, commerce and population has minimized the historic necessity of having company towns, and a number of the larger operators, over a period of years, have been selling their company-owned houses to the individual miners.

Under such a wide variety of conditions it becomes very difficult to assess the degree of responsibility of the operator, miner, state and local political bodies and others concerned in sanitation, water supply, sewage and refuse disposal, pure food and milk supplies and similar public health matters. It raises serious questions as to the methods of effecting higher standards of communal living.

No elaborate survey is required to substantiate the fact that some coal mining communities are maintained or, rather, are permitted to exist in a condition which is below any standard of living that is acceptable to the general American public. There are exceptional cases in which the houses are hazardous, the means for maintaining a comfortable temperature is lacking, the water supply is contaminated, garbage and refuse are not removed or are thrown to hogs, streams are polluted, screens and other measures of insect control are nonexistent, refrigeration is unknown, milk is disease laden and excreta and filth are close neighbors to the inhabitants.

There are a large number of "company towns" where one or several of such menaces to public health prevail and where measures to eliminate or control them are not being undertaken. In all fairness, however, it should be stated that there are also a number of company towns where living conditions are maintained on a par with the best of incorporated communities and where an active interest in public health is maintained.

The last sentence of section 5 of the Krug-Lewis agreement contains the phrase "medical, housing and sanitary facilities conforming to *recognized American standards.*"

As far as can be determined, no such "standards" exist, for it is not possible to find anywhere in the literature any definition of what constitutes recognized American standards; nor does it seem possible to measure accurately such a variable. The Medical Survey Group in this respect must be guided largely by personal observation rather than by statistical averages. What is decidedly substandard is relatively easy to recognize, and what patently appears above standard is readily discernible, but the accurate averaging of the broad range of conditions in between the two extremes defies objectivity. Until accurate yardsticks are devised, it must remain a matter of subjective judgment. One thing appears certain, and that is that conditions change with time and that the "standards" of today are not necessarily the "standards" of tomorrow.

The Medical Survey Group is not concerned with isolated instances but, rather, with the overall picture. It deals not with individual communities but with all

coal communities. Whether or not the survey being conducted will substantiate the oft repeated allegations that the communities which owe their existence to coal mining are far below acceptable standards of living is conjectural at this time. It should be borne in mind, however, that similar allegations have been made with respect to other American industries.

Before proceeding further, the prevailing confusion regarding the provisions in the Krug-Lewis agreement for a medical and hospital fund and a welfare and retirement fund should be dissipated. The medical and sanitary survey which is called for has no direct relationship to these funds. The medical and hospital fund is to be made up of the deductions which the miners pay for medical care and hospitalization and which is now generally collected by management. This money will, at an agreed on date, be turned over to a group of trustees who are to be appointed by the head of the miners' union, the president of the United Mine Workers of America. The welfare and retirement fund, on the other hand, is a new fund created by the establishment of a royalty of 5 cents on each ton of coal mined and is being paid by the operators into a fund managed by a board of trustees made up of one appointee of the union, one appointee of the government as operator of the mines and a third member selected mutually by the other two members. This welfare and retirement fund is to be used for "making payments to miners, and their dependents and survivors, with respect to (1) wage loss not otherwise compensated at all or adequately under the provisions of federal or state law and resulting from sickness (temporary disability), permanent disability, death or retirement, and (2) other related welfare purposes, as determined by the trustees." Provision is made in the contract for the correlation of the two funds.

It is apparent from the wording of section 5 of the agreement between the government and the miners' union that the medical survey deals broadly with the healthfulness of coal mining communities and with the character of the medical attention given to the mine workers. Nevertheless, in an industry which has a long-established record for the highest frequency rate and the second highest severity rate of accidents—in other words, in a definitely hazardous industry, in which the employees work underground in limited artificial light, under conditions where air is artificially moved, humidity varies, considerable quantities of dust and gases are created, loud noises are produced, and erect posture in many instances is not possible—industrial health is of vital importance.

From personal observation and from a scanning of many of the reports which have been transmitted by the field teams of the Medical Survey Group, it is evident that medical practitioners in coal mining communities pay almost no attention to industrial health matters. It is regrettable to note that the mine physician who has taken the trouble to enter and familiarize himself with the mine, much less even to make a cursory occupational study of the men he treats, is a rarity. Further, only the exceptional ones attempt to familiarize themselves with industrial health studies which have been made in the coal mining industry by others. As for the practice of preventive medicine, there is a deplorable lack of interest. With few exceptions the mine physician appears to be concerned only with traumatic surgery and the general practice of medicine.

Prepayment medical plans and hospitalization plans are common in the coal industry. Regardless of geographic location, the miner expects deduction from his wages to be made for ordinary medical care, and the physician in mining communities, with few exceptions, receives his income directly or indirectly from the funds obtained in this way. Although there are many instances where the physician is selected by the miners through their union or through a committee, but with company approval, in most instances that have been observed the selection is made by the operating company, thus engendering a suspicion by the miner that in cases involving compensation for accidents or occupational illness the doctor is partial to the views of the management. This suspicion offers handcaps to any industrial health work he might endeavor to undertake.

If, for example, the physician should attempt to promote preemployment or preplacement examinations, his motives are suspected, as the labor unions have long contended that such examinations, except of the most cursory character, have been utilized to deny employment to eligible applicants. Consequently, under the present system of employing doctors at mines the physician is limited usually to "what he can see and feel."

The coal industry is sorely in need of industrial health studies and practice. It offers a challenge and a unique opportunity to the medical profession. With little difficulty the profession should be able to obtain the cooperation of management and labor in such a program. Here is a field where the lessons of job analysis learned from the many studies in other industries can be readily applied. Here is a field in which preplacement examinations, if in existence, could be an essential adjunct to the adequate practice of medicine, for the examiner in these cases is also the physician.

Of course, many industrial health studies have been made in bituminous coal mining, particularly with reference to the harmfulness of coal dust. But it is suggested that a wider and continuous program should supplement these earlier studies. Related industries have undertaken programs such as follows:

In addition to preplacement examinations, annual or other periodic examinations of employees are made. Illness and accident records are maintained and analyses made of them. Studies are conducted on fatigue, effect of the hours of work, relation of age to productivity, fumes from explosives and machinery and the effects of mine humidity, temperature, dust and low percentages of oxygen in air. Follow-ups are made of injury cases and illnesses.

There is no affirmative evidence, except in rare instances, that the company doctor or the practicing physician in mining communities goes into the mines for the express purpose of observing at first hand the working environment of his patients. He seemingly is not interested in, and does not help to promote or teach, first aid. He has only a casual interest in the local problems of nutrition and in his patients' housing, water supply, food and milk supply, sewage disposal, welfare and personal hygiene. He hardly ever, except in epidemics, maintains contact with or enlists the cooperation of public health officials and others concerned with stream pollution and similar matters which are beyond his own personal control.

Company doctors, mine operators and labor officials have a joint responsibility in the carrying out of a comprehensive program of industrial health and preventive medicine. There is much that each group can do on its own, but on the medical profession falls the responsibility of inciting the three to the need for industrial health work in mining communities. The promotion of

industrial health is not an easy task. Above all, public education in public health matters is essential, for only through widespread understanding of such matters can private practitioners as well as public agencies be supported in measures which science and technology have proved to be wise and beneficial.

The public has no true concept of the magnificent role the medical profession plays in their lives. Medicine is a profession which engenders pride in the practitioner. It is a profession which has been ready to meet every challenge. When the statistics on selective service were published, showing that in the early part of the war 54 per cent of America's young men, according to the standards then adopted, were not fitted for military service in time of the nation's greatest need, the medical profession took the lead in urging the public to drop their complacency and to show, instead, concern over the health of the nation.

The situation in the coal mining industry, though confined to a limited but important segment of the American people, presents another challenge to the medical profession as researchers, educators, healers and leaders. That the medical profession will accept the challenge to elevate the standards of health of the 400,000 miners and their families can readily be vouchsafed. By doing so the profession can contribute inestimably to the raising of the health standards of the nation.

NEW HORIZONS IN INDUSTRIAL HEALTH AND WELFARE

ROLE OF MANAGEMENT IN MEDICAL PLANS

ANDREW FLETCHER
Executive Vice President, St. Joseph Lead Company
President, Industrial Hygiene Foundation
New York

The assigned title is so general and the horizons are so broad that I will confine the "horizon" to the point of view of management in reference to increased participation in health and medical plans, with special reference to the thought that industrial health is likely to be a factor in collective bargaining in the future.

I should emphasize at the outset that the Industrial Hygiene Foundation is basically a nonprofit research organization supported by about three hundred industrial companies for the advancement of employee health; its function is solely to find facts and disseminate such information, based on facts, to management, labor and government. As a representative of the foundation I should not and could not express a view on the rather controversial subject assigned me. I cannot speak for "all" industry, as each has its own problems and point of view which are influenced by local conditions. The thoughts which I will outline are solely those of an individual who has always been vitally interested in the improvement of industrial health, the lessening of accident hazards and the development of a satisfactory basis of mutual respect between employer and employee. The St. Joseph Lead Company, with which I am associated, is the largest miner of lead in the United States and one of the major zinc metal and oxide producers. This company thoroughly realizes from its own experience, over a long period of years, that dollars invested in improved working and living conditions pay large dividends in dollars as well as in human happiness.

As good health is the most important asset in life, the development of healthful conditions should be the one common meeting ground of agreement between management and labor. Health should not be a subject to be pulled apart, shoved around and bargained about. Of course, there may be differences of opinion in the procedure and technics employed in approaching the goal of maintaining the health of workers and in the method of increasing the ultimate profit of the employer by improved working and living conditions. Such matters are doubtlessly appropriate subjects for discussions between the interested parties, but I emphasize that technics are but tools. If an employer fails to remedy a hazard or a menace which contributes to poor working conditions, this constitutes a legitimate grievance. It should not be necessary, however, nor is it desirable, that fundamentals of health maintenance become matters of collective bargaining any more than should the principles of management and engineering.

TABLE 1.—*Comparative Absenteeism Percentages, Southeast Missouri Division, St. Joseph Lead Company*

Reasons for Absence	1940	1941	1942	1943	1944	1945	26 Wk. 194
Group 1							
Industrial injury	0.15	0.15	0.16	0.22	0.32	0.43	0.4
Group 2							
Nonindustrial injury	0.13	0.09	0.09	0.10	0.15	0.13	0.0
Influenza, grip and colds	0.41	0.54	0.31	0.51	0.64	0.73	0.6
Nasal fossae and adnexa	0.04	0.01	0.01	0.01	0.02	0.02	0.0
Bronchitis	....	....	....	....	....	0.01	0.0
Pharynx and tonsils	0.03	0.05	0.04	0.04	0.09	0.06	0.0
Pneumonia	0.03	0.04	0.02	0.01	0.05	0.06	0.0
Respiratory tuberculosis	0.05	0.04	0.01	0.001	0.01	0.02	....
Other respiratory diseases	0.02	0.02	0.06	0.02	0.02	0.04	0.0
Teeth and gums	0.02	0.03	0.04	0.04	0.07	0.05	0.0
Stomach, except cancer	0.09	0.10	0.08	0.14	0.23	0.17	0.1
Diarrhea and enteritis	....	....	....	....	....	....	....
Appendicitis	0.06	0.05	0.04	0.05	0.10	0.08	0.0
Hernia	0.01	....	....	....	0.02	0.01	0.0
Other digestive diseases	0.02	0.01	0.02	0.01	0.06	0.05	0.0
Heart	0.09	0.09	0.07	0.02	0.07	0.06	0.0
Hemorrhoids	....	0.01	0.01	0.01	0.04	0.02	0.0
Other circulatory diseases	0.03	0.02	0.03	0.01	0.04	0.04	0.0
Genitourinary diseases	0.04	0.02	0.02	0.03	0.06	0.04	0.0
Neuralgia, neuritis, sciatica	....	0.02	....	....	0.01	0.01	....
Other diseases of nervous system	0.01	0.04	0.02	0.06	0.06	0.02	0.0
Organs of vision	0.01	0.02	0.02	0.01	0.02	0.02	0.0
Ear and mastoid process	0.01	0.01	....	0.01	0.01	0.01	....
Rheumatic diseases	0.04	0.03	0.06	0.06	0.16	0.07	0.1
Lumbago, myositis, etc.	0.04	0.05	0.07	0.07	0.11	0.16	0.0
Skin diseases	0.01	0.01	....	....	0.02	0.02	....
Infectious and parasitic diseases	0.05	0.03	0.02	0.03	0.03	0.07	0.0
Cancer, all sites	0.02	....	0.01	....	0.01	0.01	0.0
Group 3							
Ill defined and unknown causes	0.33	0.27	0.65	0.90	0.74	0.97	0.9
Illness or death in family	0.25	0.25	0.30	0.44	0.73	0.75	0.6
Miscellaneous personal reasons	0.29	0.33	0.78	0.96	1.50	1.79	1.3
Total	2.28	2.31	2.93	3.78	5.38	5.92	4.8

The total workable shifts on which these percentages are based:

Year	Shifts
1940	658,850
1941	708,159
1942	940,131
1943	997,321
1944	996,368
1945	944,749
1946 (26 weeks)	472,017

SICK LEAVE WITH PAY

I have been especially concerned during the last few months with the propaganda in collective bargaining negotiations throughout the country for including in union contracts a given number of days of sick leave

with pay. All realize that over a period a man or his family will be sick and that he cannot work, year in and year out, 100 per cent of the operating time. The wage rates have been, and should continue to be, based on a reasonable amount of sick absenteeism. If they are not high enough they should be increased. But just as soon as more than a reasonable amount of time off for sickness is allowed it is solely an indirect way of obtaining a higher rate of pay and a way which will have the direct result of increasing absenteeism and, therefore, higher operating costs. The Welfare and Retirement Fund in the bituminous coal contract created by the employers paying 5 cents per ton is just an indirect way of paying a higher hourly wage rate. Last winter when the Union Committee in our Southeast Missouri operations asked for fifteen days' sick leave with pay, I thought that it would be of interest to find out just how much time was lost through sickness. For the last six and a half years we have kept a fairly accurate record of our absenteeism, which covers absences of one or more days. I would emphasize that our records are based on the employees' statements to us, and it is therefore quite probable that during the hunting and fishing seasons the absentee excuse of a cold may have been somewhat exaggerated. In any event, our sickness figures are therefore more

TABLE 2.—*Percentage of Shifts Not Worked*

Group	Reasons for Absence	1940	1941	1942	1943	1944	1945	6 Mo. 1946
1	Industrial injury...	0.15	0.15	0.16	0.22	0.32	0.43	0.44
2	Sickness.....	1.26	1.31	1.04	1.26	2.09	1.98	1.50
3	Personal reasons, including ill defined and unknown causes, illness or death in family...	0.87	0.85	1.73	2.30	2.97	3.51	2.93
	Total.....	2.28	2.31	2.93	3.78	5.38	5.92	4.87

apt to be high than low. In table 1 the detailed figures are available for any one who is interested, and in table 2 the summary figures.

Under the workmen's compensation laws employees are compensated for time lost through industrial injury, so we can eliminate this subdivision from consideration in a sickness calculation. As I do not think that an employee should be paid for time lost because of personal reasons or for illness or death in his family, we can also eliminate the third group. In the circumstances, we are interested in group 2, which shows the time lost through sickness. The average for the six and a half year period is slightly less than 1.5 per cent; the time actually lost, on the basis of the employees' own statements to us, is therefore slightly less than five days a year on a six day week and less than four days on a five day week. It therefore appeared to me that the union committee was "negotiating" when fifteen days' sick leave was asked. I am confident that if sick leave with pay had been given the time lost through sickness or alleged sickness would be greater than 1.5 per cent of the shifts worked and the cost of our mining operations even higher.

In further connection with these comparative figures, some one may be interested as to why the time lost from industrial injury has risen from 0.15 per cent in 1940 to 0.44 per cent and the so-called personal reasons from 0.87 per cent to 3.51 per cent in 1945 and back to 2.93 for the first six months in 1946. We felt that accidents would unfortunately probably increase when the five day a week prewar basis was increased to six, when the younger men left for military service and their places were filled with older and more unskilled men, and when through unionization the control of management was lessened through grievance committees' procedure, and so on, as commenced in 1943. The increase in personal reasons is probably because on a six day basis a man was required to take time for

TABLE 3.—*Comparison of Claims Paid, Cost and the Like Between Southeast Missouri Mutual Aid Association and a Representative Insurance Company*

St. Joseph Lead Company, Southeast Missouri Division

Number of employees for mutual aid coverage, June 1, 1944:

Eligible to membership	2,874
Actual membership	2,694
Average (weighted) weekly benefit	$ 12.33
Average annual contribution	6.00
Average five year annual contributions	14,899.29
Average five year annual claims	12,131.14*

* As the only cost for services of the officers and the investigating committee is the waiving of their $6 annual contribution, there is no overhead expense. The company deducts the 50 cents per month on authorization of the employee and makes no charge for such service.

The difference between claims and contributions is retained for future claims or emergencies.

Therefore the cost is approximately:

Pay in claims	$6.00 × 81.4 per cent =	$4.88 per year
Overhead		..... per year
Total cost		$4.88 per year

Insurance Company

The following figures were submitted as being representative companies, which were somewhat similar to Southeast Missouri, as to number of employees:

Co.	Date of Issue	Number Lives	Return in Last Year: Claims, per Cent	Return in Last Year: Dividends, per Cent	Return in Last Year: Total, per Cent	Cumulative Return Since Issue: Claims, per Cent	Cumulative Return Since Issue: Dividends, per Cent	Cumulative Return Since Issue: Total, per Cent
1	9/ 1/36	3,357	91.25	0	91.25	72.87	9.35	82.22
2	9/20/40	2,208	88.02	0	88.02	69.96	15.95	85.91
3	9/28/40	2,765	79.50	0	79.50	77.38	2.18	79.56
4	7/ 1/36	3,109	78.67	0.61	79.28	55.40	23.22	78.62
5	12/31/29	2,486	74.86	7.89	82.75	52.51	17.56	70.07
6	11/23/42	2,197	79.20	0	29.20	104.21	0	104.21
7	4/ 5/28	3,863	127.07	0	127.07	64.56	24.72	89.28
8	12/31/27	4,070	84.22	0	84.22	62.79	24.89	87.68
9	5/ 6/40	2,303	70.08	10.18	80.26	56.57	24.94	81.51
10	4/19/26	3,633	91.65	0	91.65	56.30	26.29	82.59

In order to obtain representative weighted average figures, companies numbered 4, 5 and 6 have been eliminated as being above or below the other group figures:

	Per Cent
Average amount paid in claims	65.46
Average amount paid in dividends	19.02
Insurance Company's handling expense	15.52
Total premium	100.00

The insurance company offered an estimated annual gross premium of $13.80 for a weekly benefit of $11.80 for any thirteen weeks' period. The premium would be around $14.42 instead of $13.80 for a weekly benefit of $12.33 instead of $11.80. Therefore the approximate cost, after dividends, would be:

Pay in claims	$14.42 × 65.46 per cent =	$ 9.44 per year
Retain for overhead	14.42 × 15.52 per cent =	2.24 per year
Total cost		$11.68 per year

family necessities, he became tired under wartime restrictions, and also because with his greatly increased weekly earnings he had sufficient money for his needs without working the full six days. The decrease in 1946 is possibly because with the return to a five day week in May the men have less take home pay even though wage rates were increased to the government pattern of 18.5 cents an hour.

HEALTH AND HOSPITAL COVERAGE

Another matter that we hear discussed, and one which is becoming a factor in collective bargaining, is

the taking out of health and hospital coverage. At the outset let us realize that if the employer pays all or a portion of the cost it is solely an indirect wage and salary increase. In my opinion we should bargain collectively on wages and salaries but not confuse the issue by bargaining on health matters. However, when the question came up at one of our divisions, I said that I would find out what the estimated cost would be if the coverage were taken out with an insurance company instead of the risk being carried by our men themselves, as they have been doing at some of our units for over twenty-five years. The comparison showed (table 3) that the insurance company would pay in claims 14.42×65.46 per cent, or $9.44 a year. Return for overhead 14.42×15.52 per cent, or $2.24 a year. Total cost, $11.68. Based on our detailed figures, the average amount paid out in claims was 81.4 per cent of the contributions. Therefore the annual cost for sickness coverage per employee was approximately $6 $\times$ 81.4 per cent, or $4.88 a year, in comparison with around $11.68 if the coverage was carried by the insurance company.

I feel that the insurance company's payment for claims is about 100 per cent higher than our men's cost ($9.44 in comparison with $4.88) because, since they could increase the net premiums by paying smaller dividends in the event of a poor experience record, they would be more liberal in considering a sickness claim than our men would be. Then, too, our men would be more "liberal" in making claims against an insurance company than against their fellow workmen. In my conversations with the insurance company representatives they make the rather unique statement that the cost was not $11.68 but only $2.24, which was their overhead, as our employees would receive the $9.44, which was better than the $4.88 when they carried all the risk themselves. For obvious reasons, this argument did not appeal to me.

I feel that sickness and hospital coverage can be carried cheaper by the men themselves or by their union than by an insurance company. If, however, they do not wish to assume the risk and desire a policy, they should arrange for it themselves and they should pay the entire cost. If the employer pays any portion, then men, being only human, will take advantage of the policy by "liberalizing" their claims.

CONCLUSION

The sooner labor and management confine negotiations to developing a suitable wage and salary rate structure, stop negotiating on matters that involve payment for time not worked, such as sick leave with pay, payment for liberalized sickness and hospital claims, the sooner our government stops paying subsidies that encourage inefficiency, as is now being done in the mining industry, and stops paying bonuses for not growing products and so on, the better off America and the world will be. The only way in which all can benefit is through increased production and the resultant higher standard of living through having more goods at lower cost. Unfortunately many persons and organizations in the United States are today thinking and conducting their operations on the selfish basis of "he is getting his, so I had better get mine." We should, one and all, think at times Is it for the best interests of our community and our country? and when it is then act constructively!

NEW HORIZONS IN INDUSTRIAL HEALTH AND WELFARE

LABOR AND MANAGEMENT AT THE CONFERENCE TABLE

BORIS STERN
Chief, Industrial Relations Branch, Bureau of Labor Statistics, U. S. Department of Labor
Washington, D. C.

As a fact-finding agency the Bureau of Labor Statistics of the Department of Labor does not initiate or advocate any peculiar or special plans for health or welfare provisions in collective bargaining agreements; nor do we advocate any plans in the other major field of industrial relations, such as wages and hours, seniority problems, problems of vacations with pay and a number of other things which come up for discussion at the labor management conference table. Our job is to keep in close touch with the entire development in the field of industrial relations so that when labor and management get together and ask the Department of Labor to tell them what has been the recent trend, say, in the case of health and welfare development or the case of incentive pay, we ought to be able to provide them with that information. We are also called on by the Congress of the United States to provide that information, and we feel that we have an obligation to the public at large; hence we often also publish that type of information.

Our sources are twofold. First, we maintain in Washington a substantial file of currently active collective bargaining agreements. At present we have about fifteen to sixteen thousand of such agreements on file, and they represent from one fourth to one third of the total number that are in existence in the United States. Precisely how many there are we don't know, because we get our agreements by the process of voluntary submission. We write to the unions or to the employers or to both and ask them to send us copies. If they think that we are reliable and they can trust us, they send us a copy. If, for one reason or another, they do not like us, they throw our letters in the waste-paper basket. Nevertheless we do have a substantial number of collective bargaining agreements which we use as a basis for the facts and the information needed by labor and management in collective bargaining.

When a new problem arises for which we do not have sufficient information but which is of importance to labor and to management, we send out field agents to study the problem on the spot, to find out how a particular program is being put into effect in the plant and how it affects relations between labor and management.

Now, what do we know about health and welfare programs? We know that the present method of establishing such programs through collective bargaining is an innovation and a product of the war. In 1942, when we made an analysis of union agreements for the War Labor Board, we found so few programs of that kind in operation that we did not even mention them in our report. Three years later, in 1945, we found that such a substantial number of health and welfare plans had been put into effect through collective bargaining that we deemed it necessary to publish a special report, which is number 841 of the Bureau of Labor Statistics and is entitled "Health Benefit Programs Established Through Collective Bargaining."

Last spring when the mine workers struck, primarily on the issue of whether or not they were to get a health and welfare fund, the demand for that report was such that our supply of available copies was exhausted within a few weeks. At present we are reprinting that bulletin, and to any one who is interested I shall be glad to send copies on request.

At the time when we published the report we estimated that 600,000 workers were covered by provisions in collective bargaining agreements which provide for some kind of accident or sickness insurance or life insurance, paid for either entirely by the employer or partly by the employer and partly by the union.

At present we estimate that more than a million and a quarter wage earners are covered by collective bargaining agreements which have provisions of that kind. The principal increase since last year, of course, has been in the mining industry with approximately 450,000 United Mine Workers members in the bituminous coal and anthracite mining.

Among the important industries which have special health and welfare clauses in agreements with unions are Men's Clothing, with approximately 275,000 workers; Ladies' Garments, with approximately 200,000; Textiles (all kinds), 125,000; Hats and Millinery, 20,000; Laundry, Cleaning and Dyeing, 30,000. Other industries with health and welfare programs established by collective bargaining for which we do not have precise information as to the number of workers covered are Streets and Railways, the Machinery Industry (particularly electrical machinery), Retail and Wholesale Trade, Fur and Leather, Furniture, Building Trades and Office Workers. Most of the A. F. L. and C. I. O. unions are now interested in programs of that kind.

While the establishment of health and welfare provisions through collective bargaining is thus a comparatively new phenomenon in industrial relations, there is nothing new in the concern of unions and employers with problems affecting the health and welfare of workers. In fact, most of the older unions have for some time had plans by which the union supplied such aid to their members. Many of these unions started as fraternal organizations and their objective was not only to raise wages and improve working conditions but also to supply sickness, unemployment, old age and mortuary aid to the members or their widows. In the course of time, and especially within the last decade or so, unions became aware of the fact that they were not properly equipped to do an effective job in this field. I quote from a pamphlet recently published by the A. F. of L.: "Unions have sponsored their own benefit plans for decades. Often actuarially unsound and overambitious in scope, many of these plans collapsed. At present only eighteen American Federation of Labor Internationals pay health benefits, and the amount is often pitifully small." [1]

Employers too have for some time been concerned with the welfare of their employees—some for humanitarian reasons, because they felt that they were responsible for those who worked in their employ; others, on the other hand, inaugurated welfare programs for their employees primarily to keep them from joining labor organizations. Some of these programs are still in operation, here and there, but not to a degree comparable with the health and welfare plans recently established through collective bargaining.

One who examines those plans, one after the other, will be amazed at the large variety in terms of what they provide for, such as life insurance, sickness benefits, accident benefits, hospitalization and the like. There is also a large variation in the way the plans are put into effect and as to how much money is being contributed to keep them going. There is a large variation as to who administers the program. We regard these variations as extremely worth while because we hope that in the course of time and by the process of experimentation those plans which are not workable and those plans which have been built on unsound ground will disappear and give way to one or several plans which may prove most effective in a particular industry.

There is more involved in the present trend than merely health and welfare programs. Only last week I had an opportunity to examine two new contracts. One was between the Brotherhood of Electrical Workers of the A. F. of L. and the Electrical Contractors' industry. They now have a provision for retirement benefits to the 100,000 electrical workers employed in that industry paid for partly by the union and partly by a payroll tax on the employers. There we have an attempt to take care of the older workers, who, when they reach the age of 65, are no longer in a position to compete with the younger men.

Another agreement, that of the International Ladies' Garment Workers in Philadelphia, provides for payments by the employers to a fund out of which the workers will receive what they call "job security" benefits. The clothing industry is highly seasonal and, time and again, workers find themselves out of a job. In setting up the fund, management and the union inserted another clause which states that it is the objective of labor and of management in that industry to see to it that the workers who now are employed sometimes only eight months or less in the course of the year are to be protected through employment or through benefit payments so that they can live decently throughout the 365 days of each year. In this one sees the beginning of what is now known as the guaranteed annual wage or the guaranteed annual employment.

We in the Department of Labor therefore feel that the new trend of labor and management getting together at the conference table to agree on what is to be done to improve the health and the welfare of the workers constitutes a step in the right direction. Out of the large variety of programs and welfare plans included in collective bargaining agreements there is bound to evolve one or several plans which will prove the most adapted to the needs of the workers concerned and at the same time not too costly for industry and the consumers to bear the burden. Labor has tried to develop a program of its own but has not been entirely successful; management too has tried to protect the health and welfare of its employees through programs initiated entirely by management, but these also have not been successful. It is only when labor and management join forces and cooperatively, with or without the aid of the government, tackle the problem that we can expect real accomplishments.

1. Health Benefit Plans by Collective Bargaining, published by American Federation of Labor May 25, 1946.

ABSTRACT OF DISCUSSION

ON PAPERS OF BOONE, FLETCHER AND STERN

MR. BORIS STERN, Washington, D. C.: My remarks about collective bargaining dealt with what exists in the country and dealt with collective bargaining agreements that we have in the files of the Department of Labor and which we have analyzed. I did not state that certain things should be included in collective bargaining agreements or finally on the problem of whether or not a fund allocated for sickness benefits or for health benefits or for old age benefits is the same thing as an increase in the wages and, as Mr. Fletcher indicated, should be given in the form of wages. I have a feeling that the average worker has not yet been educated sufficiently to be able to invest his wages in that kind of insurance. Therefore, if it is the same thing—if the money is to be expended and we merely have a choice whether it is to be given to the individual worker in the form of a wage increase or whether it is to be given to an insurance company in the form of a future protection of the worker, his children and his family, I—and this is not the position of the Department of Labor, as I am expressing my feeling in the matter—feel that the money invested in the protection in insurance is a much better investment than an increase in the wages or salary structure.

REAR ADMIRAL JOEL T. BOONE (MC), U.S.N.: I want to make it clear that our group is a fact finding group. We have nothing to do with other groups. In other words, we are making a diagnosis and a prescription; whether it will be taken to a drug store or interpreted by a Christian scientist, I wouldn't know. But we are absolutely impartial. We have no ax to grind, and we have no preconceived ideas. We are naval officers assigned to a job, assigned to a ship at a foreign station. When the job is completed we shall make our report. We shall salute and return to our stations. Now I should like to say, in explanation of the 5 cents a ton regarding the fund for retirement and welfare, that that is a tax on the ton, but the Wage Stabilization Board granted an increase to the operators of the coal. I have often wondered what the definition of "welfare" is. I should be very happy if it is defined and the limitations given to me as to its application.

CHAIRMAN SAWYER: Ladies and gentlemen, have we a few questions?

QUESTION: I should like to have Admiral Boone repeat where the money comes from in the two funds and who administers the two funds.

ADMIRAL BOONE: The money for the retirement and welfare fund comes from the 5 cents royalty on a ton of coal. The trusteeship is set up for that and it is composed of a member appointed by the union, one by the management, or the United States government, and they select the third member. The second fund is the medical care and hospital fund, and the money for that comes from voluntary pay envelop deductions of the miners and it goes to the trusteeship appointed by the mine workers. The first fund has been accumulating since the 15th of August, and if is being held in escrow in the custody of the paymaster general of the Navy in a New York bank. No trustees have been appointed to date. The government has the mines under operation and for the time being it has been agreed to accumulate the fund and not to appoint the trustees. As to the second fund, Mr. Lewis promised, at my request at the beginning of the survey, that nothing would be done about it until the survey was completed. In other words, the operators were ready to pull out of their medical care and hospital groups, feeling that it was in Mr. Lewis's hands now. There is a fine medical service and hospital program being carried out, and the miners and their families would be left desperate without it. So that until the survey is completed, no action can be taken by that fund. The two funds are to be correlated under the trusteeships.

QUESTION: Is this bituminous agreement going to set standards for the future in other industries?

MR. STEIN: I cannot answer the question about the future. The trend is in the direction of labor and management getting together and by agreement setting up some kind of program which will on the one hand satisfy the needs of the workers and on the other hand be not so costly so that industry could afford to pay it. Whether it will take the form of the fund that has been established for the miners it is hard to say; whether it will be the form of the fund being accumulated by the Garment Workers it is hard to say. Nobody can tell. It may be that half a dozen of those programs will develop in the course of time.

BLAST INJURY

CAPTAIN R. HAROLD DRAEGER (MC), U.S.N.
JOSEPH S. BARR, M.D.
and
W. W. SAGER, M.D.
Bethesda, Md.

The detonation of a high explosive in the vicinity of the human body may result in various injuries, depending on which of the three states of matter, gas, liquid or solid, effectively transmits the force of the explosion.

The effects of an explosion in air and water have been described in medical literature in considerable detail.[1] Recently a new clinical entity, solid blast,[2] has been described, in which the force of an explosion is harmfully transmitted to the human body through solid structure.

This paper is concerned with a comparative study of the three types of blast injury—air blast, water blast and solid blast. The physical forces, mechanism, pathology, clinical features, prevention and treatment of such injuries are briefly considered.

NOMENCLATURE

Blast injury is an acceptable generic term for the various harmful effects of an explosion on the human body. Air blast, water blast and solid blast may conveniently designate the three types of blast injury. The word blast relates to the causative explosion; the terms air, water and solid denote the material medium which harmfully transmits the explosive force. Each of these three types produces various effects, which, broadly considered, include all the injuries which may be inflicted by the detonation of a high explosive.

The medical literature contains a variety of terms which have been applied to blast injuries. Wind of shot,[3] reflex paralysis,[4] bomb blast, shell shock, concussion and other terms have been used to designate the effects of an explosion in air. Underwater concussion, submarine blast and immersion blast have been used to indicate the effects of underwater explosion on immersed persons. Likewise the names deck slap, deck

From the Naval Medical Research Institute and U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md.

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1. Bohrer, J. V., and Lester, C. W.: Wounds of Thorax, S. Clin. North America **23**: 468-486 (April) 1943. Fulton, J. F.: Blast Injuries, New England J. Med. **226**: 1-8 (Jan. 1) 1942. Sutherland, G. A.: The Physics of Blast, Lancet **2**: 641-642 (Nov. 23) 1940. Friedell, M. T., and Burke, R.: Preliminary Appended Report on the Causation of Blast Injury, U. S. Nav. M. Bull. **41**: 363-366 (March) 1943. Krohn, P. L.; Whitteridge, D., and Zuckerman, S.: Physiological Effect of Blast, Lancet **1**: 252-259 (Feb. 28) 1942.

2. Barr, J. S.; Draeger, R. H., and Sager, W. W.: Solid Blast Personnel Injury: A Clinical Study, Mil. Surgeon **98**: 1-13 (Jan.) 1946.

3. Dickson, W. E. C.: Blast in 1812 (Mr. McTernan's Case of Death from the Wind of a Shot), Lancet **1**: 385 (March 20) 1943.

4. Mitchell, S. W.: Reflex Paralysis, Circular 6, Office of the Surgeon General, Washington, D. C., Government Printing Office, 1864.

heave and destroyer heel have been used to designate the effects of the acceleration of a deck structure caused by an explosion in the proximity of a ship. This confused terminology is simply resolved by the use of the terms air blast, water blast and solid blast.

AIR BLAST

The detonation of a high explosive in air results initially in an extremely rapid outward movement at supersonic speeds of hot gases generated by the chemical reaction of the explosive. An air compression wave is thus produced which travels outward at sonic speed (about 1,100 feet per second). Such an air pressure wave subjects everything in its path first to an outward thrust as the wave front strikes the object, then to compression as it is enveloped by the wave, and finally to a minor wave of negative pressure. The effects of an air pressure wave are apt to be erratic, owing to the alteration of pressure by reflection resulting in cancellation by interference or augmentation by reinforcement.

An explosion is also associated with the liberation of a large amount of energy in the form of heat. This is dissipated in part as radiant energy (light and heat) and largely by the outward movement of hot gases. The thermal effect, although of only a few milliseconds duration, may cause serious "flash burns," particularly of the exposed portions of the body.

The energy of an explosion is also transmitted to neighboring objects, moving them outward with great velocity. From the standpoint of trauma to the human body, secondary injuries from flying débris and metal fragments and from the person being thrown against fixed objects are most important.

It is unnecessary in this paper to discuss wounds, cuts, contusions and thermal injuries such as flash burns. Such injuries are common, easily recognized and clinically well understood.

The pressure wave of an explosion in air produces certain interesting and important primary effects on the human body. Chief among these is pulmonary blast injury. The severity of pulmonary injury more nearly determines the fate of the individual than any other primary injury caused by air blast. Damage to the lungs interferes with respiration and produces shock.

The respiratory symptoms and signs are embarrassment of breathing, cyanosis, pallor, restlessness and frank hemoptysis or blood streaking of the sputum.[5] Pain in the chest is a constant symptom and is of two types. There may be pain felt centrally, deep in the chest, due to mediastinal hemorrhage or emphysema. There is also in the majority of the cases lateral pain due to pleural and chest wall injury, made worse by respiratory movements.[6] Respirations may be either rapid or slow. Barrow and Rhoades described the respiration of their patients as slow, shallow and sighing, except when severe pain was present, and then the patients gasped for breath. Cyanosis, the result of deficient aeration, occurred in many instances within an hour or more after the injury. Cough has been noted and may last several days.[7] Burbank and Forsee[8] describe a ballooning of the lower part of the chest as the most characteristic finding on physical examination. In uncomplicated cases the resonance on percussion is normal. Breath sounds are weak, and coarse bronchial rales may be heard on auscultation.[9]

At autopsy in fatal cases the findings vary in severity.[10] The lung may contain various amounts of extravasated blood. Lockwood[11] in describing the injuries to the lungs in World War I stated that rupture of the visceral pleura or a complete collapse of the lungs occurred in severe cases. The alveoli may contain blood from a tear in the interalveolar septum or from lacerations along the lines of the ribs. Red hepatization may occur.[12] As would be expected on x-ray examination, various areas of increased density are visible.[13] The bases, rather than the apexes, are the areas where x-ray changes are usually seen.

Abdominal pain, which is characteristic of water blast, is infrequent in air blast, but sometimes it and rigidity are predominant features. In an occasional case these symptoms are so prominent that a laparotomy appears to be imperative, but as a rule on exploration only punctate subserosal hemorrhages are found.[14] The abdominal pain in some instances may be referred from the chest, or rarely it may result from abdominal visceral injury.[15]

A striking clinical feature is the effect of air blast on the central nervous system. The prominence and ease of recognition of the symptoms attributable to lesions of the central nervous system caused overemphasis of this feature during the first world war. Since that time a clearer conception of the nature of these injuries and their relationship to the symptoms found in cases of air blast has been attained.[16]

Those whose symptoms are purely psychogenic and have no organic basis are apprehensive, lose weight, eat poorly, do not sleep well and have terrifying dreams. The symptoms of those suffering from organic brain damage are lethargy, slow cerebration and lack of interest. They are not apprehensive, sleep more than normal rather than less, usually gain weight and have a normal appetite.[17] The degree of lethargy, according to O'Reilly and Gloyne, is indicative of the severity of the injury.[18] It is thought to be the result of petechial hemorrhages in the central nervous system.

5. Clute, K. F.: Blast Injuries of the Thorax and Abdomen, Univ. Toronto M. J. **22**: 147-155 (Feb.) 1945. Palma, J.: Blast Injury of the Lungs with Comment on Immersion Blast Injury, Hawaiian M. J. **2**: 42-47 (Sept.-Oct.) 1942. Bohrer and Lester.[1]

6. O'Reilly, J. N., and Gloyne, S. R.: Differential Diagnosis of Lung Injuries, Lancet **2**: 423-428 (Oct. 11) 1941. Dean and Thomas.[9]

7. Barrow, D. W., and Rhoads, H. T.: Blast Concussion, J. A. M. A. **125**: 900-902 (July 9) 1944.

8. Burbank, B., and Forsee, J. H.: Bomb Blast Injuries, Mil. Surgeon **93**: 124-132 (Aug.) 1943. Clute.[5]

9. Dean, D. M., and Thomas, A. R.: Effects of High Explosive Blast on the Lungs, Lancet **2**: 224-226 (Aug. 24) 1940. Palma.[5]

10. Falla, S. T.: Effect of Explosion Blast on the Lungs: Report of Case, Brit. M. J. **2**: 255-256 (Aug. 24) 1940. Zuckerman, S.: Experimental Study of Blast Injuries to the Lungs, Lancet **2**: 219-224 (Aug. 24) 1940; in discussion,[12] Hadfield.[12] Greaves, Draeger, Brines, Shaver and Carey.[15] Dickson.[3]

11. Lockwood, A. L.: Some Experiences in the Last War, Brit. M. J. **1**: 357-358 (March 2) 1940.

12. Hadfield, G., in Discussion on the Problem of Blast Injuries, ibid. **34**: 171-192 (Jan.) 1941. Barrow and Rhoads.[7] Zuckerman.[10]

13. Barrow and Rhoads.[7] Burbank and Forsee.[8]

14. O'Reilly and Gloyne.[6]

15. Greaves, F. C.; Draeger, R. H.; Brines, O. A.; Shaver, J. S., and Carey, E. L.: An Experimental Study of Underwater Concussion, U. S. Nav. M. Bull. **41**: 339-352 (March) 1943.

16. Ascroft, P. B.: Blast Injury of the Lungs with a Curious Lesion of the Cerebrum, Lancet **1**: 234-235 (Feb. 20) 1943. McKibben, P. S.: A Note on Intravascular Fat in Relation to the Experimental Study of Fat Embolism in Shell Shock, Am. J. Physiol. **48**: 331-359 (April) 1919. Robb-Smith, A. H. T.: Pulmonary Fat Embolism, Lancet **1**: 135-150 (Feb. 1) 1941. Krohn, P. L.: Blast Injury to Lung, Brit. M. J. **1**: 645-646 (April 26) 1941. Mogena, H. G.: Hemorragia interna por onda de explosion, Semana méd. españ. **1**: 111-112 (Sept. 24) 1938. Crichton-Miller.[18] Mitchell.[4] Krohn, Whitteridge and Zuckerman.[4] Dickson.[3] Hooker.[23] O'Reilly and Gloyne.[6]

17. Pugh, H. L.: Blast Injuries, S. Clin. North America **23**: 1589-1602 (Dec.) 1943.

18. Crichton-Miller, H.: Somatic Factors Conditioning Air Raid Reactions, Lancet **2**: 31-34 (July 12) 1941.

Abbott, Due and Nosik [19] called attention to cases of subdural hematoma and effusion in which there was a history of severe concussion and loss of consciousness for periods varying from a few minutes to several days. There were persistent headaches, loss of memory and irritability. Rarely were positive neurologic signs present, and those that were present were not pronounced. The most common findings were a slight facial palsy, a transient hemiparesis and occasionally a transient change in reflexes. Without careful study these patients would be discharged from the military service as chronic invalids with a diagnosis of a functional disorder.

Zuckerman reported in 1941 that, in experimental animals exposed to high air blast pressures, pial and ventricular hemorrhages occurred. Hemorrhages, especially in the thoracic cord, were found about the spinal roots.[20] The work of Denny-Brown and Russell [21] on cerebral concussion is of interest in that they called attention to concussion produced by the acceleration of the head.

Injury to the ears has been described by many authors, and in some cases ear lesions are of diagnostic significance.[22] Tinnitus, deafness and pain referred to the ears were almost universal immediately after the explosion. The most severe immediate deafness was associated with hemotympanum rather than with perforation. In patients with actual hemorrhage into the ear drum, usually in the region of the umbo and the handle of the malleolus, there was almost complete deafness. Recovery of this group was rapid, with but little impairment of hearing after two weeks. Perforation of the ear drums, varying in size from a complete loss of the entire membrane and ossicles to small slits, occurs frequently in air blast. There is no apparent relationship between loss of hearing and the size of the perforation.

Ocular symptoms and signs may occur; a sensation of grit in the eyes, photophobia, blepharitis and lacrimation are the most usual. Three cases of subconjunctival hemorrhage and 1 of clouding of the corneal epithelium occurred in Barrows and Rhoads's [7] cases. Blindness as a result of air blast is rare.

Shock is present in all cases of air blast injury. Electrocardiographic study of a series of cases showed a flattened QRS complex and a normal sinus rhythm.[7] No arrhythmia or fibrillation was found. A subnormal temperature on admission to the hospital was followed by a slight rise four to twelve hours later.[7] Hooker [23] experimentally produced in animals a sudden drop in arterial pressure to approximately one half of normal, a condition he describes as "primary shock." His animals showed pulmonary damage at autopsy. Pugh [17] called attention to the large vascular bed found in the lungs, which, when injured, afforded a sufficient etiologic factor for the production of shock. It must also be remembered that usually the entire body is exposed to the effect of the blast; many undiscovered lesions may aid in the production of shock. Abbott, Due and Nosik [19] state that examination of the fatal cases at autopsy reveals multiple hemorrhages throughout the body. As would be expected, lesions of other organs have been reported, but these occur in isolated instances.[20]

Treatment of air blast is the treatment of shock and of such other lesions as may be present. Lockwood [11] advised that these cases should be sought among those lying about close to the site of an exploded shell or bomb. Oxygen therapy is generally accepted as being of great value and should be started at the earliest possible time. Bed rest and a minimum of transportation and handling are of utmost importance. Plasma and other intravenous fluids should be given carefully, owing to the danger of increasing the amount of pulmonary hemorrhage.

WATER BLAST

The detonation of a high explosive in water also results initially in an extremely rapid outward movement of hot gases, generated by the chemical reaction of the explosive. A water pressure wave is thus produced which travels outward at sonic speed (about 4,800 feet per second). Immersed persons traversed by such a pressure wave and subjected to forces of compression greater than 500 pounds per square inch are apt to sustain fatal injuries from rupture of the intestine or of pulmonary vessels.[24] Corey [25] states that an underwater blast pressure of over 250 pounds per square inch will result in intestinal perforations and that even lower pressures must be looked on as dangerous.

Since the human body has a density approximately equal to that of water, it is traversed by the water pressure wave and only the air-containing portions of the body are subjected to sudden compression and reexpansion. This causes rupture of tissues adjacent to the contained air, chiefly the lungs and intestine. The head usually escapes damage, as it is held out of water.

Secondary injuries in water blast are much less frequent than in air blast, owing to the restraining effect of water on metal fragments and wreckage. However, because of its greater density, water will harmfully transmit the primary pressure wave for a much greater distance than air. Flash burn effects are inconsequential in water blast.

Water blast was recognized in World War I, but it has been only in the recent war that a careful study of this phenomenon has been made. Mathew [26] of the Royal Navy described 10 cases in 1917. In 1940 Atkins [27] described 3 cases which occurred during the evacuation of Dunkirk. Breden, d'Abreu and King [28] reported cases resulting from the explosion of torpedo and depth charges. Greaves and Draeger [15] and Friedell and Ecklund [29] have published experimental work. Many other studies of value have been made. At present our knowledge of this form of blast injury is equal to that of air blast.

The sensation of having received a "quick punch" in the abdomen, or a feeling of compression of the chest

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and abdomen, is complained of by survivors. In some cases there is only mild discomfort after this initial sensation, in other instances the abdominal pain within thirty minutes becomes very severe. Later, frequent bloody stools may be passed. If there has been a perforation of the bowel, evidence of peritonitis will develop and a paralytic ileus may manifest itself.

The abdomen may become rigid as a result of perforation of the intestine, from subserous hemorrhage of the intestine or from referred pain from the chest when there is associated chest injury. Shock is present in all cases, as described in air blast.

The abdominal pathologic changes consist largely of lesions of the gastrointestinal tract.[30] Hemorrhagic lesions, varying in size and shape, may occur in every part of the tract from the stomach to the rectum. Considerable edema of the bowel may be present. Perforations may be found at points where the bowel contains perceptible amounts of gas.[31]

Injury to the chest is less frequent than in air blast; when it does occur, the symptoms and pathologic changes are similar to those of air blast. The cranium is least frequently injured because it is not often immersed at the time of the explosion. When injury is suffered, the symptoms and pathologic changes are similar to those of air blast.

The patients should be carefully watched, treated for shock and kept on bed rest. Handling and transportation should be avoided as much as possible. Sufficient fluids, including plasma and whole blood, to maintain fluid and electrolytic balance should be given. A Miller-Abbott tube should be used in cases of paralytic ileus. Sufficient sedation should be given to relieve pain and apprehension. Considerable difficulty may be experienced in determining the necessity for surgery, which is always indicated in perforation of the intestine. Decision in this, however, must of necessity depend on the judgment of the individual surgeon.

SOLID BLAST

The detonation of a high explosive in the proximity of a semirigid body, such as a ship or a tank, results in the transmission of energy through the solid structure as a flexion wave, resulting in a sudden acceleration of deck and bulkhead surfaces.

These sudden accelerations are capable of causing serious injuries to personnel. Since this type of injury is caused by a sudden acceleration, the damage is greatest at the point of contact. Injuries of the lower extremities, particularly the ankles, are therefore most common. Secondary injury due to the victim being thrown against the overhead or, in the case of ships, overboard is also frequent.

The pathologic changes in the human body produced by solid blast bear little resemblance to those of air or water blast. The primary injury is predominantly skeletal and vascular, chiefly affecting the lower extremities. We [2] have presented elsewhere a detailed study of the injuries which occurred in 50 cases in which the effects of solid blast were studied.

Injuries involving the ankle and tarsal bones are most common and characteristic. These injuries are usually compound comminuted fractures involving the os calcis, astragalus and the distal tibia and fibula. In 36 per cent of our cases such injuries were suffered. Less frequent injuries are fractures of both bones of the leg (18 per cent). About one half of these are compound fractures.

Fractures of the tibial condyles, involving the knee joint, occur in about one fourth of the cases and are rarely, if ever, compound.

Dislocation of the knee, with or without associated fracture, is a frequent and extremely serious injury (20 per cent of the cases). Irreparable vascular damage necessitating amputation occurs in the majority of the dislocations. Peroneal nerve damage, resulting in foot drop, is associated with dislocation of the knee in a few instances.

Fractures of the femoral condyles and of the shaft of the femur, hip and pelvis are rarely seen in solid blast injury. On the other hand, fractures of the spine occur quite frequently (18 per cent of the cases); in about half of them there is associated cord or cauda equina damage resulting in partial or complete paraplegia. Fractures of the skull, face and upper extremities occur infrequently.

Cartilaginous aseptic necrosis of the ankle, knee and hip occurs frequently as a result of trauma to the articular cartilage of these joints and may be present without fracture or infection. This cartilaginous damage results in partial or complete loss of motion of the involved joints in many instances.

Soft tissue wounds associated with compound fractures occur in about 30 per cent of the cases and are usually caused by penetration of bone fragments from within outward. In addition to these wounds, severe ecchymosis and contusion about the ankles is frequently observed.

Vascular injury associated with dislocation and fracture of the knee occurs often in the form of rupture or thrombosis of the popliteal vessels. This is a serious injury, and the ensuing gangrene often necessitates amputation. Damage to the contents of the thorax and abdomen has not been seen as the result of solid blast.

Cerebral concussion as evidenced by transitory loss of consciousness occurs in about two thirds of the cases. Paraplegia of some degree is present in about half of the cases of fracture of the spine.

Exact figures on mortality and morbidity rates among persons subjected to solid blast are not available, but examination of the casualty figures reveals that among ship's personnel the probability of being killed or injured aboard a small ship or a craft subjected to mine or torpedo explosion appears to be approximately one third of the crew killed, one third injured and one third uninjured. Many victims close to the explosion are killed immediately or die within a very short time, presumably as the result of cerebral injury or as a result of drowning while unconscious. Those who survive the immediate effects of the blast may succumb later from shock or paraplegia. One patient on whom postmortem findings are available died seven days after injury. The chief findings were hypostatic congestion of both lungs, cloudy swelling of both kidneys, free fluid in the pericardial and pleural cavities, multiple fractures, a compound dislocation of the right knee and gangrene of both lower extremities. The cause of death was recorded as shock resulting in renal failure and uremia.

Most cases of solid blast injury have occurred as the result of maritime disasters in which ships were blown

30. Yaguda, A.: Pathology of Immersion Blast Injury, U. S. Nav. M. Bull. **44**: 232-240 (Feb.) 1945. Clark, S. L., and Ward, J. W.: The Effects of Rapid Compression Waves on Animals Submerged in Water, Surg., Gynec. & Obst. **77**: 403-412 (Oct.) 1943.

31. McMullin, J. J. A.: Foreword to Symposium on Immersion Blast, U. S. Nav. M. Bull. **41**: 1-31 (Jan.) 1943.

up or severely damaged. "On the spot" clinical recorded observation of these patients is scarce, as skilled medical care and adequate equipment are rarely available immediately. Surviving victims exhibit a variety of clinical signs and symptoms. Approximately one half or more are unconscious or dazed as the result of cerebral concussion, and most of the victims exhibit classic signs of shock. Almost all the severely injured have bilateral fractures of the lower extremities, and about half of them are compound. Swelling of the soft tissue of the ankles and lower part of the legs occurs rapidly and develops to such a degree that it prevents effective manipulative reduction of the fractures. Patients who have fractures and dislocations of the knees almost inevitably develop gangrene of the feet and lower part of the legs, with the usual clinical findings of cold, livid skin and absence of pulsation of the vessels.

Personnel who happen to be sitting down when subjected to solid blast have the shock wave transmitted directly through the pelvis and are most likely to receive fractures of the spine. Such spinal fractures are practically all in the dorsolumbar area; in about half the cases there is associated paraplegia. Personnel standing at the time of the explosion may be tossed against the overhead or fall back against the deck after being thrown into the air with such force that secondary fractures of the spine are produced.

As most solid blast injuries are the result of a major maritime disaster in which a ship is blown up or severely damaged, the patients receive a minimum of medical care during the first hours after injury. Attention is directed primarily to rescue and resuscitation from immersion, treatment of shock, simple splinting of fractures, dressing of wounds and transportation to a place where adequate medical care is available. The surgeon's first duty is to assess the general condition of the patient and to combat shock, if it is present, by administration of fluids, transfusion, complete bed rest and sedatives. The next is a complete physical examination, supplemented by the necessary x-rays, in order to determine the exact type and degree of injury. The injuries are almost always multiple, and many of them will be overlooked if the examination is not thorough. The exact treatment depends on many factors, including the type and severity of injury, the condition of the patient, the time elapsed since injury, and the judgment and skill of the surgeon, but certain general principles are applicable:

Soft tissue wounds should receive early attention. If they are not obviously infected, devitalized tissue should be excised and adequate drainage insured by lightly packing the wound. Systemic chemotherapy should be instituted. Primary closure of these wounds is usually not feasible because of the severe trauma to the surrounding soft tissues, although delayed closure may occasionally be possible. Fractures about the ankle and of both bones of the leg, which are often present, are usually severely comminuted, crushed, displaced and accompanied with extreme swelling of the soft tissue. As a result, anatomic reduction is rarely possible. The most successful method of dealing with such fractures appears to be by manipulation and molding of the fragments. Shortening should be reduced and impaction broken up by preliminary traction, preferably by means of a Kirschner wire through the os calcis. After reduction, the leg should be immobilized in a carefully molded plaster cast. The Kirschner wire should be removed within a week or two, as there is little or no tendency for overriding to occur in these comminuted fractures. Open reduction by operative means, and the use of external skeletal fixation by multiple pins, greatly increases the chances of sepsis occurring, and are rarely, if ever, indicated.

When there are fractures and dislocations of the knee joint the displaced bones must be reduced as soon as possible; the circulation of the limb must be carefully watched for impairment. The leg should be slightly elevated and immobilized in a bivalved plaster cast. Procaine lumbar sympathetic block should be used repeatedly in every case of impending gangrene. In spite of these measures, an open flap or guillotine amputation will frequently be necessary because of gangrene.

The great variety of secondary fractures and miscellaneous injuries present no special difficulties and should be managed in the usual fashion.

The rehabilitation of these cases, after the acute phase of convalescence is over, demands a combination of surgical, physical, occupational and psycho-therapy.

Open wounds and draining sinuses from compound fractures are eradicated by carefully planned surgery, if they do not heal spontaneously in a reasonable time. Operative treatment includes eradication of the sinus tract and removal of sequestrums. In a few instances a large bony defect has been packed with dried plasma and penicillin powder (1 Gm. of powdered plasma to 200 units of penicillin). The soft tissues and skin are then closed by plastic procedure or the operative defect is allowed to granulate in.

Physical therapy is necessary in all cases to restore joint function and muscular strength. Weight bearing, even with crutches and properly fitted shoes, is at first very difficult and painful. However, in spite of extremely severe injuries involving the weight bearing joints, many of these patients eventually develop surprisingly good function. Operative intervention should usually be deferred until its necessity has been completely demonstrated by the test of use.

Among the late operative procedures which may be necessary are (*a*) lumbar ganglionectomy to improve the circulation in the lower extremity; (*b*) removal of irregular bone spurs and displaced fragments which lie in the soft tissues of the sole of the foot, lateral incisions for their removal being preferable; (*c*) stabilization of the foot by some type of triple arthrodesis; (*d*) fusion of the ankle or knee joint; (*e*) ligamentous repair of the knee; (*f*) amputation of useless extremities.

PROTECTIVE MEASURES

The protection of the human body against the effects of an explosion depends on preventing a harmful amount of energy from reaching the body. This can be accomplished by a device which breaks the continuity of the medium through which the energy is being transmitted.

The only effective protection against air blast is the interposition of solid material which absorbs or deflects the hot gases, the blast wave and the flying fragments. An air raid shelter or fox hole are examples of this type of protection. Personal protective devices (special clothing and antiflak vests) have been devised for protection against flash burns and flying fragments. Ear defenders will prevent perforation of the ear drums, but there is no practical personal device which is effective in shielding the chest and abdomen from the air pressure wave.

Protection against water blast is readily obtained by interposing a layer of cellular air-containing compressible material between the air containing portion of the body (chest and abdomen) and the surrounding water. A kapok life preserver 1 to 2 inches thick gives protection against many times the lethal wave pressure of 500 pounds per square inch, provided the chest and abdomen are completely covered and the head is out of water. A device of this size is too cumbersome to be practical. However, many lives have been saved through a better understanding of the nature of water blast injury and the observance of certain safety precautions. Wearing a properly fitted life jacket,[32] swimming away from a sinking ship or other source of likely underwater explosion and getting as much of the body out of the water as soon as possible are practical measures.

Protection against solid blast may be accomplished by interposing a deformable collapsible medium between the solid surface and the human body at the point of contact. Antiblast mats and shoes constructed to support normal body weight, but which collapse under increased pressure, will afford a considerable degree of protection.

ABSTRACT OF DISCUSSION

DR. WILLIAM F. HOLCOMB, Oakland, Calif.: The presentation of this paper on blast injury is a distinct contribution to the medical record of the war. The first hand knowledge of these pathologic conditions has been splendidly summarized and a simplified terminology proposed. This valuable record will serve as a summary and an account for the use of future historians. When the term blast injury comes to my mind it is always associated with masses of patients being dirty. Those that are affected with air blasts are dirty and torn from the effects of dirt being driven into the body with explosive force. They are often also covered with fuel oil, which certainly is the most prominent feature of those that are involved in water blasts. The dirty and disheveled appearance of those persons who are in compartments where solid blasts have been produced is most striking. In U. S. Mobile Hospital number 2 most of our time was spent in cleaning up the patient for further transfer. This was probably a valuable occupation, for it kept us busy from producing harm by heroic treatment. The description of the kinds and characters of fractures received from various types of injury is excellent. Fractures of the metatarsal heads were not particularly mentioned but appeared to be rather common in those cases which we received in Hawaii. Why the metatarsal head should be broken just at the base and set up on top of the shaft I cannot say, but a number of cases of that type were seen in which all five metatarsal heads were completely and cleanly broken at their base and were displaced approximately the width of the head. It is difficult to explain why or how so much damage can be done to the ankle, foot and leg, as well as to the knee, without having a fracture of the femur, either in the condyles or on the shaft. I saw only one fracture of the femur, associated with other signs of blast injury, in a fatal case occurring off Balikpapen, Borneo. I believe that the description which the authors have given of the initial difficulties in diagnosis might be augmented. In the sinking of the *Yorktown* and the *Hammann* there were cases in which an air blast from a falling bomb, a solid blast from the ship's explosion and a water blast from the detonation of the depth charges of a sinking destroyer were received. These persons presented problems in diagnosis and treatment which were extremely complicated and were probably often poorly evaluated. One junior medical officer started from the scene of the battle of Midway with 125 men coughing blood from the effects of their water blast, many of them passing blood by rectum and all of them suffering from shock and immersion. The heroic work and self sacrifice of these destroyer medical officers will long be remembered by those who received their treatment or knew of their efforts.

DR. STEPHEN HOLSTEIN, New York: I had the poor fortune of having the largest accumulation of cases that the Navy had right after D day, and I was interested in exactly this injury. I wondered if anybody had done any investigation on the results of this direct thrust of solid blast. I called the injury "concussive injury sustained aboard light craft." I found that the shafts of the long bones were not involved. The femur was involved not at all in our investigations, the tibia in 1 case. The first point of contact was in the os calcis or the os tragicus, the second in the knee, the third within an inch or an inch and a half of the ankle. By careful questioning it was easy to determine exactly what the injury was before the x-ray film came back. If the patient was solid on the deck and the thrust was a direct thrust, if he was on a destroyer escort—which is a light vessel—and the thrust was directly upward, one could be certain that he had an os calcis fracture and nothing else. If, however, the thrust caused the craft to skip a little along the water, the injury was on the knee. If the thrust was upward and out, the injury was at the ankle about an inch above the articulation with the astragalus. The question I should like to ask is this: With the shoe devised as the result of the experiments, I can readily see how a direct upward thrust of the deck aboard a light or moderately heavy ship can be overcome. Were any experiments conducted on direct lateral or lateral and upward thrusts in the course of the work done?

DR. JOSEPH S. BARR, Boston: I had anticipated there would be criticism of the term "solid blast." It does not fall on the ear immediately as something that one recognizes as to its connotation. We went over all the variations of suggested terms and finally fell back on the subterfuge of coining one. If we are going to have such a clinical entity as air blast and as water blast, it is fairly obvious that with the force transmitted through solid material "solid blast" might be an acceptable term. The patient does not have to be standing in order to get a solid blast injury. A number of our patients were sitting. Those patients sustained fracture of the spine. They were the ones who sustained paraplegia. One patient was lying in his bunk at night with his feet against a steel bulkhead, and he sustained fractures of both os calces, so it is not necessary to be either standing or sitting. Though the bed or bunk is quite a satisfactory protective device, it does not prove to be 100 per cent protective. In the 50 cases which we analyzed carefully and which I myself saw, none presented what we felt were primary fractures of the metatarsal heads due to solid blast. One or two had secondary injuries. They had been tossed such distances that on landing they had sustained injury to the metatarsal heads. Perhaps fracture of the metatarsal heads can occur as a result of primary solid blast, but it is probably extremely rare. Fracture of the femur in our experience was the same as that of the two discussers; it rarely occurred as a primary effect of solid blast. As to experiments on lateral thrust, I am not a physicist and am not able to discuss that. This problem is still being worked on in the Navy. We discussed that possibility at great length with physicists of note, and they have felt that lateral accelerating forces could scarcely be imparted to the human body from the ship. If one is standing vertically and there is a lateral thrust, the knee might possibly be strained, but that lateral thrust did not account for the dislocations to the knee that we saw. Probably the individual variations in anatomic strength of various areas may account for the differences in the types of fracture. In one person the os calcis will be fractured, in another the lower end of the tibia will be fractured. Position has something to do with it. Those who happened to be standing with their knees slightly flexed may have sustained dislocations of the knee in one direction, whereas if they were standing with the knees hyperextended they might have sustained a dislocation in another direction. These are hypothetical answers to the question, and we must await further experimental evidence before we are didactic about it.

32. Palma, J., and Uldall, J. J.: Immersion Blast Injuries, U. S. Nav. M. Bull. **41**: 3-8 (Jan.) 1943. Gates, R.: Roentgen Findings in Immersion Blast Injuries, ibid. **41**: 12-19 (Jan.) 1943.

ACCIDENTS ON THE FARM

H. HERMAN YOUNG, M.D.
and
RALPH K. GHORMLEY, M.D.
Rochester, Minn.

The number of accidents that occur on farms each year and the severity of the resultant injuries have for years been appalling to doctors in agricultural communities, and yet to date comparatively little work has been done to prevent these accidents. In the past the national state and local safety councils have directed all their efforts toward the prevention of traffic and industrial accidents and have turned to the problem of farm safety only recently.

In Minnesota attention was first directed to the problem of farm accidents in 1934. In that year a safety contest was inaugurated in the state 4-H clubs, and safety soon became one of the most popular activities of these clubs. Other agricultural organizations and their leaders became interested, and a section soon was set up in the Minnesota Safety Council to which was assigned the problem of developing an educational program for the farmers of the state. As a result of the efforts expended, the farm safety program in Minnesota has now progressed from the state planning stage to local action. Emphasis is now placed on organized work in the counties and individual townships; the latest innovation is the holding of regional farm safety institutes in various sections of the state. To these meetings come representatives from the local farm bureaus, rural youth organizations and 4-H clubs in the surrounding counties. At these meetings members of the various sections of the Minnesota Safety Council and a doctor who has been called on to treat farm accident cases discuss with these representatives the causes of farm accidents and the means of preventing them. The representatives carry back to their local organizations the information they have received. Each county then plans its own safety program and proceeds with it. One county conducted a survey of farm accidents which revealed the fact that the total loss of time due to accidents in that county during one year amounted to six man years. In another county members of the farm committee of the safety council called on every owner of a corn picker and discussed safety. The result was the complete elimination of mishaps caused by the corn picker in that county that year.

The problem of accidents on the farm is national in scope, although in details it varies with different localities. Tractors are used fairly commonly throughout the country, but other pieces of machinery are employed only in certain sections. All farmers in the corn belt are familiar with the mechanical corn picker but may not be so familiar with the large combines of the wheat country and so forth. Various other sections of our country have their individual differences, but the basic need of all sections is that the farmers learn to use their machinery safely. The National Safety Council now has a section which promotes farm safety in all sections of the country, but the main action on prevention of farm accidents of necessity must be local in nature in order to cope with the varied problems.

Farming is today one of the most hazardous of all occupations. Other industries are compelled by law to provide safety devices for their employees and care and compensation for any one who is injured. Many individual industries have realized the importance of safety for their employees, and they not only conduct safety courses for the operators of various machines but penalize any employee failing to comply with safety requirements. They are constantly on the alert for the causes of accidents in their plants and attempt to remedy them. This is not true of the farmer.

The farmer is generally his own boss or employs only a few men. As a rule he does not carry compensation, hospital or accident insurance. However, he is handling machinery that is as powerful as many other industrial machines and handling this machinery over rough ground in contrast to many industries that can bolt the machine securely to a solid floor. Furthermore the farmer uses his various machines seasonally, whereas the operator of a punch press, for instance, uses the same machine daily and has an opportunity to become familiar with the sources of danger. In order to speed up production, the farmer permits the removal of safety devices from his machines or fails to replace them after repairs are made. He often attempts to relieve a clogged machine while it is still in motion or may use a piece of makeshift apparatus that is entirely unguarded.

TABLE 1.—*Causes of 575 Accidents on the Farm, 1935-1943* Inclusive*

Cause	Number	Deaths	Mortality Rate per 100 Accidents
Falls	193	9	5
Machinery	186	0	0
Livestock	104	5	5
Fire (burns)	15	2	13
Falling trees	13	1	8
Ax	13	0	0
Unclassified cause	51	1	2
Total	575	18	3

* Average of 64 farm accidents per year seen at the Mayo Clinic.

He uses old timber when safe flooring is necessary, operates buzz saws unprotected, handles unruly livestock, is required to walk on uncertain footing and in countless other ways exposes himself to danger. In doing his tasks he is out in all kinds of weather and must often wear bundlesome clothes that hamper quick movements. These are but a few of the dangers that lurk on the farm. To these must be added the danger of gas gangrene and tetanus, for the farmer's hands and clothes are contaminated with fertilized soil and manure, and any wound may permit the entrance of these organisms into the body, where they produce disastrous results.

In spite of medical and surgical advances that have been and are being made, the physician cannot help but be impressed with the almost utter hopelessness of many patients who have been injured while at work on a farm. The best cure still lies in prevention of the accidents. The first step in prevention likewise lies in educating the farmer to the facts of how, where, when and why accidents happen on the farm.

Accurate and complete statistics on farm accidents in our country are not available. So that one may know the problem that exists, such statistics must be available; and it is for this reason that the records of the Mayo Clinic were recently reviewed. Since the clinic is situated in a farming community, it was felt that this review might throw some light on the problem.

From the Section on Orthopedic Surgery, Mayo Clinic.
Read before the Section on Orthopedic Surgery at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

STUDY OF 575 FARM ACCIDENTS

In the nine years from 1935 through 1943 there were 575 accidents on the farm which caused the person injured to come to the Mayo Clinic. This makes an average of 64 farm accidents a year which sent patients to this one clinic alone. Several patients were involved in more than 1 accident in the nine years. The majority of these patients came from the surrounding four or five counties, but the total number is not an index of the total farm accidents that occurred in those four or five counties. Many other patients were treated by physicians in their immediate locality and others died before reaching medical care. The total at the clinic may be said to represent with fair accuracy the number of serious accidents that occurred in these counties during that period. Included in the study were all accident cases encountered at the clinic which were due to falls, farm machinery, livestock, injuries in the farm home, buzz saws and so forth. All automobile and highway accident cases were omitted.

TABLE 2.—*Injuries Sustained in 193 Accidents on the Farm Due to Falls, 1935-1943 Inclusive*

Type of Fall	Total Accidents	Injury *				
		Fracture	Transverse Myelitis	Traumatic Amputations	Perforating Perineal Wounds	Miscellaneous †
Off farm equipment	42	29	4	0	3	12
Miscellaneous types	39	29	0	0	3	14
From haymow	20	15	3	1	3	1
Off buildings	16	18	3	0	0	1
On stairs	16	15	2	0	0	2
Off horses	15	12	0	0	0	3
On ice	13	12	0	0	0	1
Off ladders	12	15	0	0	0	4
Off scaffolds	12	13	3	0	0	0
Out of trees	8	10	1	0	0	0
Total	193	168	16	1	9	38

* Some patients had more than 1 injury.
† Lacerations, dislocations, cut tendons and so forth.

Falls.—Falls led all other causes of accidents in this series and carried a mortality rate of 5 per hundred accidents (table 1). The commonest accident of this type was that in which the patient fell off some piece of farm equipment. In close succession then came miscellaneous falls—falls from haymows, buildings, stairs and horses, on ice and off ladders, scaffolds and out of trees (table 2). The youngest person injured in a fall was 3 years of age and the oldest 84 years. The average age of the patients in this group was 42 years (table 3). The commonest injury sustained was a fracture of one or more bones. Falls caused 168 fractures (table 2). In addition 16 patients, 3 of whom died as a result of their injury, had transverse myelitis, 1 had a traumatic amputation and 9 had perforating wounds of the perineum. Three of the last group died as a result of their injury. The perforating wounds of the perineum are interesting because of the manner in which these accidents happen. Eight of the 9 patients suffering from perforating wounds of the rectum or perineum gave the history of impaling themselves on the handle of a pitchfork as they fell or jumped from a piece of farm machinery or as they slid down a haystack or out of the hayloft. The handle of the fork entered the rectum of 1 patient without causing any external wound; yet at necropsy nine perforating wounds in the bowel and a ruptured liver were found. The remaining patient in this group sustained his injury when he fell from a wagon and became impaled on sharp corn stubble in the field. It is interesting to note that in this entire series no patient was injured with the tines of the pitchfork.

TABLE 3.—*Range of Ages of the Persons Involved in 575 Accidents on the Farm, 1935-1943 Inclusive*

Type of Accident	Age of Patient, Years		
	Youngest	Oldest	Average
Falls	3	84	42
Machinery	2	78	37
Livestock	3	85	46
Burns	7 mos.	83	35
Falling trees	17	71	44
Ax	16	62	29
Unclassified	15	84	42
For whole series	7 mos.	85	39

Farm Machinery—Accidents attributed to farm machinery followed falls in a close second place as the cause of farm accidents in this series; there were 186 such accidents (table 1). Although there were no hospital deaths in this group (table 1), the morbidity rate was extremely high. Exactly a third of the patients in this group suffered from traumatic amputation of a part or the whole of one or more extremities. There were in addition 110 fractures, 2 cases of transverse myelitis and 7 cases of avulsion of the skin of the penis and scrotum. The youngest patient injured by a piece of farm machinery was 2 years old and the oldest was 78. The average age in this group was 37 years (table 3). The tractor caused the largest single group of accidents and was followed closely by the corn picker, corn shredder and buzz saw (table 4). The injury of particular interest in this group is that of avulsion of the skin of the penis and scrotum. It happens usually as the farmer attempts to step across a moving belt or flywheel. The overalls become caught in the belt or wheel and are twisted and torn from the patient's body. As the clothing is torn off, the skin of the penis and scrotum becomes entangled and is stripped away. These accidents produce shock, and considerable surgical care is required for restoration of the parts by skin grafting.

TABLE 4.—*Injuries Sustained in 186 Accidents on the Farm Due to Machinery, 1935-1943 Inclusive*

Machine or Method	Total Accidents	Injury *				
		Fractures	Transverse Myelitis	Traumatic Amputations	Avulsions of Penis and Scrotum	Miscellaneous †
Tractor	34	33	2	2	0	12
Corn picker	29	14	0	15	1	6
Corn shredder	24	10	0	19	0	8
Run over by machine	20	16	0	0	0	8
Buzz saws	16	2	0	7	0	19
Threshing machine	9	2	0	4	1	6
Grain elevator	8	7	0	2	1	1
Feed mill	7	4	0	2	0	2
Combine	7	3	0	1	3	1
Corn binder	6	3	0	3	0	1
Gas engine	6	4	0	2	0	0
Mower	6	3	0	2	0	4
Rope and pulley	6	5	0	1	0	0
Grain binder	4	3	0	0	1	1
Miscellaneous machines	4	1	0	2	0	2
Total	186	110	2	62	7	71

* Some patients had more than 1 injury.
† Lacerations, dislocations, cut tendons and so forth.

Livestock.—The third most frequent cause of the accidents in this series was livestock; there were 104 such accidents (table 1). The mortality rate in this

group was 5 per cent; three deaths were due directly or indirectly to horses and two deaths were caused by bulls (table 5). The youngest person injured was 3 years old and the oldest was 85. The average age for this group of patients was 46 years (table 3). Although the bull is generally considered the most dangerous animal on the farm, it may be seen in table 6 that the horse accounts for most of the livestock accidents; 66 of the 104 accidents were due directly or indirectly to horses. There are several reasons for this high incidence. First of all there are more horses than there are bulls on the farm and the farmer handles them oftener in his daily work. When handling a bull the farmer usually treats him with respect, but he is likely to become careless in the handling of a horse. Table 6 reveals that fractures were the main injuries received

TABLE 5.—*Deaths at Clinic from Accidents on the Farm, 1935-1943 Inclusive*

Accident	Patient's Age, Yrs.	Injury	Cause of Death
Fall			
On pitchfork handle	47	Perforating perineal wound	Peritonitis
On ground	53	Lacerated knee	Gas gangrene
Against radiator	83	Fractured ribs	Bronchopneumonia
On pitchfork handle	63	Perforating perineal wound	Peritonitis
On pitchfork handle	17	Perforating perineal wound	Peritonitis
From haystack	46	Fractured cervical vertebra with transverse myelitis	Pneumonia
Downstairs	61	Fractured humerus	Pulmonary embolus
Downstairs	62	Fractured cervical vertebra with transverse myelitis	Paralysis
Downstairs	60	Fractured cervical vertebra with transverse myelitis	Shock
Run over by horse-drawn binder	44	Multiple fractures	Shock
Kicked by horse	63	Fractured mandible and maxilla	Bronchopneumonia
Kicked by horse	10	Fractured skull	Meningitis
Attacked by bull	56	Fractured cervical vertebra with transverse myelitis	Paralysis
Attacked by bull	44	Fractured cervical vertebra with transverse myelitis	Paralysis
Lighting stove with kerosene	83	Burned 75 per cent of body	Shock
Clothes caught fire from lantern	70	Burned 50 per cent of body	Shock
Struck by falling tree	25	Transverse myelitis	Shock
Scratched with barbed wire	71	Laceration of scrotum	Gangrene and pulmonary embolus

in accidents caused by livestock. In addition there were 3 cases of transverse myelitis and 51 miscellaneous injuries.

Miscellaneous Accidents.—Seventy-seven accidents in this series were caused by the ax, by falling trees or by a group of unclassifiable causes (table 7). Again, fractures were the most frequent injury; traumatic amputations occurred in 2 cases and transverse myelitis in 4.

There were 15 cases of burns in this series of accidents with two hospital deaths, a mortality rate of 13 per hundred accidents (table 1). Most of these burns occurred through the ill advised use of kerosene or gasoline in the starting of a fire or through the explosion of a stove or bottled gas. The youngest person burned was 7 months old and the oldest was 83 years; the average age for the group was 35 years (table 3).

In the entire group of 575 accidents in this series the injuries sustained consisted of 396 fractures, 65 traumatic amputations, 25 instances of transverse myelitis, 9 of perforating perineal wounds, 7 avulsions of the skin of the penis and scrotum and 208 miscellaneous injuries (table 8). Some of the patients had more than 1 fracture or miscellaneous injury. The youngest person involved in an accident on the farm in this series was aged 7 months, while the oldest was aged 85 years. The average age in the entire

TABLE 6.—*Injuries Sustained in 104 Accidents on the Farm Due to Livestock, 1935-1943 Inclusive*

Animal	Total Accidents	Injury *		
		Fractures	Transverse Myelitis	Miscellaneous †
Horses	45	34	0	24
Runaway horses	21	19	1	11
Bulls and steers	17	19	2	4
Cows	15	11	0	7
Pigs	5	2	0	4
Sheep	1	0	0	1
Total	104	85	3	51

* Some patients had more than 1 injury.
† Lacerations, dislocations, cut tendons and so forth.

group was 39 years (table 3). Although these accidents cover almost the entire span of human life, the average person is injured and suffers death or a permanent disability at the age when he is the most productive. The problem, therefore, is an economic one as well as humanitarian. In this series of cases there were eighteen deaths, a mortality rate of 3 per hundred cases (table 1). This does not mean that these were the only deaths in the counties around the clinic which were due to farm accidents during this nine year period. These eighteen deaths represent only those patients who had sustained an injury on the farm and died after reaching the Mayo Clinic. Other persons died before medical aid could be given by any physician, and some may have died after receiving medical care elsewhere.

COMMENT

Complete statistics on farm accidents and their mortality rate are impossible to obtain because not all these accidents are reported. The National Safety Council [1] reported 17,500 accidental deaths due to occu-

TABLE 7.—*Injuries Sustained in 77 Miscellaneous Accidents on the Farm, 1935-1943 Inclusive*

Type of Accident	Total Accidents	Injury *			
		Fractures	Traumatic Amputations	Transverse Myelitis	Miscellaneous †
Cut by ax	13	7	2	0	11
Hit by falling tree	13	8	0	2	4
Unclassified accidents	51	18	0	2	33
Total	77	33	2	4	48

* Some patients had more than 1 injury.
† Lacerations, cut tendons, dislocations and so forth.

pation and 1,800,000 occupational injuries in the year 1944. Of these deaths 4,300, or about 25 per cent of all occupational deaths, were those of farmers or ranchers who were killed at work. More accidental deaths occurred in agriculture in that year than in any of the other five major industrial groups. In addition there were 900,000 nonfatal farm home accidents and 225,000 nonfatal farm work accidents in 1944. Also 14,800 farm residents were accidentally killed in 1944.

1. Accident Facts, Chicago, National Safety Council, Inc., 1945.

and this total is exclusive of those killed in motor vehicle accidents.

By using this report of the National Safety Council as a basis (and this report showed a decrease of 5 per cent from previous years) it can be estimated that approximately 38,700 farmers were killed at work, 133,200 farm residents were killed accidentally and 10,125,000 nonfatal farm home and work accidents occurred in the United States during the nine years covered by our present report.

The problem of the farm accident is a serious one. Although today some effort is being directed toward reducing such accidents, more needs to be done. Prevention of these accidents is by far the best treatment of them, and the first step in this prevention is in educating the farmer in methods of safety. Children, for instance, have no more right to be near or on a piece of operating farm equipment than around a punch press or on a moving locomotive, and yet they are permitted to be there daily.

SUMMARY

Five hundred and seventy-five accidents on the farm caused the persons injured to come to the Mayo Clinic in the nine years from 1935 to 1943 inclusive. Most of the injuries were due to falls, farm machinery and livestock. Most of the persons when injured were in their most productive years. Accurate statistics of farm accidents are not available, but the mortality rate from them is known to be extremely high. Other industries have reduced their accident rate by eliminating hazards as much as possible and by educating their employees in the safe ways of handling machinery. An educational program for the farmer is the first step in decreasing the number of accidents on the farm.

TABLE 8.—*Type of 575 Accidents on the Farm, 1935-1943 Inclusive*

Type of accident	Total Accidents	Injury *					
		Fractures	Traumatic Amputations	Transverse Myelitis	Perforating Perineal Wounds	Avulsions of Penis and Scrotum	Miscellaneous †
Falls	193	168	1	16	9	0	38
Machinery	186	110	62	2	0	7	71
Livestock	104	85	0	3	0	0	51
Miscellaneous types	77	33	2	4	0	0	48
Burns	15	0	0	0	0	0	0
Total	575	396	65	25	9	7	208

* Some patients had more than 1 injury.
† Lacerations, dislocations, cut tendons and so forth.

ABSTRACT OF DISCUSSION

DR. HUGH T. JONES, Los Angeles: Drs. Young and Ghormley are to be commended for bringing this problem of farm accidents before the medical profession and the proper civic and farm organizations. It is natural during the war years that emphasis has been placed on the problems connected with industrial injuries. The law compels insurance of these men in industry, and insurance companies have been helpful in the prevention of industrial injuries and accidents. Farm laborers in general throughout the United States have little insurance protection, and statistics on farm injuries are meager. At first thought we in California are likely to think that without the many corn pickers and corn shredders of the Middle West we enjoy a certain immunity to farm accidents. On second thought, we know that we have ladders, wagons, trucks, stairs for serious falls, thrashing and mowing machines with moving parts, livestock, barbed wire, falling trees and accidents with pitchforks, all of which carry a threat to safety. The ever prevalent gas and tetanus bacilli are especially prevalent in farming communities. About a month ago I attended a meeting of the California Safety Council in Los Angeles. I know that at present its main concern is with the terrible traffic toll. However, I am sure that this council could be helpful in the problem of farm accidents if given the proper information. A review of hazards in each state under the direction of the safety council in each state seems proper, and the cooperation of the medical profession with the various safety councils also seems important to me. Before we are through, it is likely that some plan of insurance for farm workers will be arranged. Then, with better statistics, better plans of prevention can be instituted. In the meantime, such educational work as Dr. Young and Dr. Ghormley are carrying out will be helpful in bringing about the needed change.

DR. DOUGLAS D. DICKSON, Oakland, Calif.: Drs. Young and Ghormley are to be commended on their excellent survey of farm accidents and their study of the patients cared for at the Mayo Clinic during this nine year period. In making an effort to investigate the origin of such accidents, one finds that data are not available except in very few states. Their exhibit illustrates beautifully the extent and the importance of this problem. I should like to emphasize the statement with regard to the fact that more accidental deaths occur in agriculture than in any of the other five major industrial groups. Startling facts are also revealed by a recent report of the National Safety Council. It reports that agriculture, with more workers than any other industrial group, had a death rate of 53 per hundred thousand workers. In all other industrial groups the rate was 31 per hundred thousand. In males alone only two causes of death rank above accidents, namely heart disease and cancer. In other words, accidents account for more deaths than such common diseases as pneumonia, tuberculosis and nephritis. In a survey made in 1945 in the state of Wisconsin, people on thirty-five farms were interviewed, revealing that one out of every nine full time operated farms was the scene of a farm work accident resulting in either loss of time or, in many instances, loss of life. Dr. Young has already pointed out that a large factor in the causation of many accidents is that farmers use machinery who are not trained in the use of such equipment and that they are not highly skilled and trained in such work. Their equipment in many instances is poor and in a poor state of repair. Other industries, by means of study and educational programs, have eliminated hazards to a great extent, accounting for these startling figures. Large industrial concerns come under the jurisdictions of federal and state inspections as a means of instituting safety devices and organized educational programs. The National Safety Council should be accredited for its work in this educational program.

DR. HUGH H. YOUNG, Rochester Minn.: I want to thank both Dr. Jones and Dr. Dickson for their discussion and to make one other statement. You will note that in the groups that Dr. Ghormley and I discussed there were a number of young children who were hurt. These children were hurt while riding on pieces of farm equipment. That same farmer, in another industry, operating a punch press, for instance, would not be allowed to bring his child to work with him and he would not think of doing so. I believe that this is one place where we can make an effort to reduce the number of accidents in children.

Hoarseness in Children.—One subject in laryngology that has not received sufficient attention is hoarseness or other faulty voice conditions in preadolescents or young adolescents. We all seem to expect to hear the "cracked voice" in boys and have a tendency to laugh it off and to assume that the lowering of the voice in girls is just part of the transition phase. It is not fair to these children to take this attitude, and it is our duty to investigate these conditions, as many times there are associated remedial causes which should be eliminated.—White, Francis W.: Some Causes of Hoarseness in Children, *Ann. Otol., Rhin. & Laryng.* **55**:537 (Sept.) 1946.

INDUSTRIAL OPHTHALMOLOGY AS OF 1946

HEDWIG S. KUHN, M.D.
Hammond, Indiana

Prior to the war the field of industrial ophthalmology was actually a subdivision of the field of industrial hygiene, strange as that may seem now. The emphasis was entirely on treatment of injuries, traumatic surgery, study in prevention and treatment of toxic damage to the external eye, or by systemic effect producing intraocular pathologic change, and, finally, the study of medicolegal procedures and workmen's compensation rules and regulations. Actually the term industrial ophthalmology is already obsolete, the more correct term being occupational ophthalmology.

Some phases of work held to be within the scope of occupational ophthalmology are the following:

1. New visual testing technics have been devised to provide accurate information whereby physical capacities (eyes in this instance) are matched to job demands.

2. Modern concepts of corrective procedures include a thorough knowledge of both actual work distances and mechanical details of job demands. Here the future use of special occupational glasses (not goggles) in textile and hosiery industries in particular gives promise of being a tremendous contribution to visual comfort, increased production and the solution of many industrial relations problems.

3. A development of a new type of fact finding approach in the handling of properly recorded visual statistics by using modern punch card analytical procedures with resulting profiles and patterns of visual performance has been the contribution in particular of Professor Joseph Tiffin and his staff in their brilliant work. Here the nonmedical man has put into the hands of medical people a new and significant tool.

4. Lagging somewhat in understanding and in outlined procedures is the development of closer relationships between top management and the medical profession—a "must" if industrial eye problems are really to become a part of the responsibility of those ophthalmologists who are interested.

5. Active interest in the field of safety to eyes and to individuals from eyes (body accidents due to visual defects) and the understanding of protective equipment is bridging the previous gap between the work of safety engineers and that of professional ophthalmic services.

6. An understanding of illumination in industry (as different from illumination in schools or in homes) and the use of color in reducing visual fatigue is now being developed by illumination research engineers (not salesmen) and by Faber Birren, the du Ponts and others.

7. An adaptable, elastic and yet definite understanding of what constitutes a minimum industrial eye service for either a large or a small plant is the phase of our subject that draws together all other phases into a program.

8. There is now also recognition that our medical schools, both in the undergraduate and in the graduate years, need to incorporate courses with full information of all problems indicated. Research work in scientific centers will broaden.

9. Tied to the lack of present educational opportunities for ophthalmologists interested in industrial work is one stark question that must be faced, by this group in particular; that is, how many ophthalmologists are going to be interested in industrial ophthalmologic work as it is understood to be of this year 1946? Are ophthalmologists aware that industry will demand service, including all or part of such services as we are discussing? What is or will be our position in carrying through? Can we "deliver"? Are we willing to play a part or not; if so, what part?

10. What are some of the immediate problems where knowledge is meager and further research work is urgent, such as special near point complications, new chemical hazards, a better understanding of ultraviolet and infra-red hazards and training of special personnel to carry out details of industrial eye programs?

Of greatest importance is a thorough knowledge of a few highlighted angles.

VISUAL MASS TESTING TECHNICS

The first step taken because of pressure for war production was research underlying the subsequent development of various mass testing instruments and technics. It is important here to emphasize that the continued use of the phrase "visual screening" is both inaccurate and psychologically inadvisable. In the more distant past, job applicants and labor in general have felt (and formerly rightly so) that preemployment visual tests (as well as physical examinations) were a procedure utilized to screen out, i. e. refuse jobs to, applicants. Actually, visual testing procedures as developed do the opposite. They are the best insurance of acceptance of an applicant and his proper placement. Also, the discovery of substandard visual skills among payroll employees in a properly conducted visual survey has made possible the correction of many visual defects and the continuance of jobs formerly in jeopardy.

Proper testing of applicants can be and is being done either within industry itself or in the professional consultant's office. Visual surveys of any given plant must, of course, be done not only in the plant but as close to the job as is physically possible. In the past (and too often even now) the only eye examination given an applicant was the Snellen distant vision test with the use of an improperly lighted wall chart by an indifferently trained person. In some instances such tests are made in the waiting room over the heads of the applicants who, if they had not already memorized the chart, have ample opportunity to do so. In using the battery tests, malingering is reduced to a minimum and the person is given an accurate series of tests including much more than distance acuity. These tests, usually best given in the employment or personnel offices by specially trained lay technicians, are tests recording visual skills. They are not eye examinations and are never thought of as such. They belong in the category of aptitude tests. They point the road to proper job patterns and lead the way to the doctor's office and timely corrective procedures.

There are a number of so-called battery instruments: The telebinocular has been used successfully in many industries. When the medical director or professional consultant is sufficiently interested, valuable information can be secured. By changing the type and sequence of the targets, modifying the record blanks and reevalu-

Read before the Section on Ophthalmology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

ating the conclusions, our staff uses this instrument. However, in many instances the instrument seems to have been sold as a commodity by salesmen and left on some one's desk for industry to struggle with.

The Ortho-Rater was developed by the Bausch and Lomb Optical Company. This instrument and the follow through program met not only some extremely critical war production needs but some even more urgent military needs. The instrument records in detail those visual skills thought important now. New tests can be added as the need is demonstrated and as our knowledge increases. The training of the technician operating the instrument, the breakdown of the recorded data into practical job standards, the support and assistance given to personnel, employment and medical staffs, the continuing scientific research made possible through the services of the Purdue Industrial Visual Institute, makes the program (the instrument being a mere tool) a great step forward for industry and for us. The institute faculty includes medical members.

The Sight-Screener, developed by Paul Boeder, scientific director of the American Optical Company, is another instrument which will play a part in this field. To date, however, there has not been developed the supporting follow through we should like to see for the evaluation of data revealed or for the continuing research and guidance needed by industry and its professional consultants. It is to be hoped that this phase of the contribution of the American Optical Company will be developed. There is always a need for various types of testing equipment and always plenty of room for further research.

Visual data important to secure and record for each employee, in whatever way is practical, include (1) distance acuity with and without correction, (2) near acuity with and without correction, (3) phorias for distance and near, (4) stereopsis for distance and near and, (5) color appreciation. The medical profession is most interested (as far as acuity goes) in a record of acuity for distance without any correction. This is essential for future reference and for possible medico-legal purposes. On the other hand, personnel, placement and training officers are most interested in the vision of an employee with the correction he is actually wearing, that being the pair of eyes with which that employee is actually operating and producing. Both records are essential.

All data secured in a battery of tests confined to one instrument can also be obtained in one's private office by a series of individual tests: projection charts for distance acuity, Maddox rod or prisms for muscle imbalances, Verhoeff stereoscope for depth perception, Ishihara color chart and the various near vision acuity cards. It might be well here to emphasize the appalling lack of standardized, accurate and reliable near vision acuity test. The ordinary fingermarked reading card, in its many variables, and an assortment of substitutions such as the Lebenshohn chart and the Guibor chart are the only technical equipment the professional man has with which to record exact near vision data.

SPECIAL CORRECTIVE PROCEDURES

To date, substandard visual skills and actual acuity defects are only in part correctible. It is important that industry itself understand this and that we do also. In most instances one can correct a refractive error. Such a correction given to an individual for his occupational needs must be based on his actual work distances. If these distances are identical with his personal needs, the prescriptions are identical; if not, he will require two pairs of glasses. Unusual job demands, for instance, are looping (work at 8 inches), blueprint and layout work (24 to 36 inches) or inspection of hot steel on moving rolls (at a distance of 4 feet to 6 inches). The best refractive skill is required to correct properly for most occupations, but this skill can be tragically ineffective unless actual work operations and distances have been witnessed by the refractionist. A high hyperope doing near vision inspection of great detail may require not only more plus but perhaps a prism base-in, while a young myope working at 8 inches would certainly get into difficulties if given a full minus correction for use at 8 inches. Workers seldom can reliably describe their work distances. If unable to visit local industries, one may need to ask the employee to bring a memorandum from the plant giving exact work distance. Industrial refractions should be supplemented by a fundus examination, notation of any external pathologic conditions and the taking of rough form fields. Here a note of warning is indicated: the concept of specific job correction can be exploited by unethical or income-seeking services; all benefit in vitally needed cases will be erased if the truism is made into a racket.

While refractive errors are in the main correctible, a lack of color sense and complete lack of stereopsis are not. There are some phorias (exophoria for near especially) that are definitely amenable to orthoptics. In cases in which the exophoria is producing symptoms and if orthoptic training is available, such cases (being correctible) should be referred. However, nothing is more destructive to confidence in an eye program than (as matters stand today) to (1) send workers lacking stereopsis or color vision or minor muscle imbalances out for correction only to have these men told "there is nothing wrong with you" or (2) to send out persons with exophoria and persons whom orthoptics could help when orthoptic training facilities do not exist. Such blundering practices do not "make friends and influence people."

STATISTICAL ANALYSIS OF VISUAL DATA

Perhaps the greatest contribution is the fact finding approach as developed at Purdue University and the type of thorough research work of Berens and Hardy and Rand. Medical people are definitely allergic to the vocabulary of statisticians and to any challenge made to their clinical and intuitive evaluation. It requires an earnest and sincere effort to keep an open mind to this phase of industrial eye problems if one is to move forward with the vanguard of thinking and to profit by the consistent drive to validate previously presumed "facts." An instance is our conception that 20/20 vision is "normal." In analyzing acuity tests in a plant of 6,800 employees, this is shown to be incorrect; 54.9 per cent had a vision of 20/15.

Statistical study of visual data is already making it possible to develop formulas whereby job patterns (predicted visual skills) can be set up to match visual job demands. Such an approach (which supplants the old trial and error or survival of the fittest procedure) is not yet easy for some of us to swallow. I also was allergic to this type of theoretical thinking on the part of so-called "laymen," who proceed then to lay down boundaries for us, though applied psychologists and statisticians with Ph.D. degrees are experts in their own right. The consistent revelation of results in line with predictions has forced on me the conviction that

we, as physicians, dare not waste this valuable new tool by wilful resistance and can overcome our reluctance even to the point of eager enthusiasm.

TOP MANAGEMENT AND THE PHYSICIAN

In the past the ophthalmologist has received the employee with a perforating injury of the eye in the hospital; he has treated lime burns in his office; he has

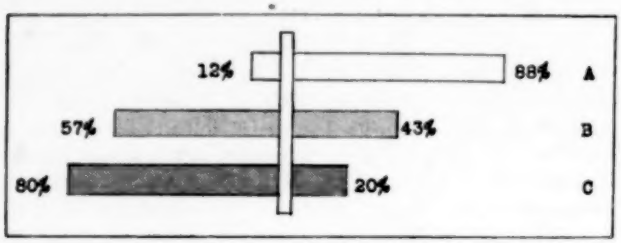

Fig. 1.—Depth related to safety (from "Spotting Accident Prone Workers by Vision Tests," Factory Management and Maintenance, June 1945).

diagnosed an optic atrophy in a man exposed to lead or methyl alcohol poisoning and found the toxic source. But as of 1946 he holds a position parallel to that of the metallurgist or research director of an industry. When a steel plant gets a batch of steel that does not behave properly, the problem is thrown into the lap of the metallurgist and his laboratory. Industry is now throwing problems connected with "visual bottlenecks" of every kind into our laps. We in our laboratories have to learn how to find the answers. The problem given us may be tied to the labor turnover found among loopers (who number 200,000 in the United States)—the turnover is actually almost entirely due to visual fatigue, pain and discomfort. On the other hand, our problem may be one of alerting a plant when an isolated case of epidemic keratoconjunctivitis presents.

When the professional eye consultant is asked by top management to suggest improvements in the handling of their eye problems, it is essential that we seek to understand industry: their personnel structure, no two plants being alike, the interrelationship between departments, each jealous of its own prerogative, and the special idiosyncrasies of plants having absentee control from a mother plant where perhaps some diehard resists change. We do need to throw our academic reserve overboard. No doctor loses caste with management or the workers if he drops the use of sixty-four dollar words and learns the vernacular of the men that he is or will be working with. It is usually best to work out an industrial eye program step by step and not to advocate a sudden "all or nothing" proposal.

An eminent ophthalmologist who has contributed much to industrial eye work made the flat statement once that it was impossible to work with unions. It undoubtedly was difficult to do so in the community where this colleague practices but that is not true in all parts of the country or for every union or for every ophthalmologist. There are many industries in which it is far easier to work with the unions than with management. In one instance in my experience the entire ophthalmologic program (after being set up at management's request) was backed and supported by the union, and mandatory goggles protection was policed by the union itself. Real salesmanship is required in working with industry, a good deal of give and take. The many and varied challenges—no two plants the same, no two programs the same—are part of the exciting returns made.

SAFETY IN EYES

While plans for the protection of the eye have in the past been mainly in the hands of a lay safety director, the ophthalmologist is increasingly concerned with what the actual hazards to eyes are and the protective equipment required for each type of hazard; and he recognizes also the hazards from eyes (due to defective sight).

We have been inclined to say empirically that stereopsis, for example, is necessary for safety on certain jobs—arriving at this opinion by process of logic only. Instead, we need to seek evidence from surveys and experiments conducted with proper controls. Our logic relative to stereopsis and accidents turned out to be good for certain jobs, as shown in figure 1. In a metal industry three groups of employees were studied separately over the same period of time, group A having had no accidents, group B having had a high frequency of minor injuries and group C having had serious injuries. This chart shows that of group C (serious injuries) only 20 per cent scored above average on this test. Such studies were conducted by N. Frank Stump, Ph.D., at Revere Copper and Brass Inc.

Such relations that can be demonstrated between accidents and inefficient visual performance illustrate the method by which the fact finding approach is conducted. Dr. Stump established the desirable pattern of visual skills on a battery of tests for accident free workers on those jobs that he studied. For purpose of classification of employees as hazardous or accident free, it was determined which workers qualify on all, on some or on none of these tests. From such tests it was possible to predict which new employees would accumulate the largest number of accidents. New employees whose vision deviated greatly from the visual standard, logic would tell us, should have the largest accumulation of accidents, and they did according to the facts. Figure 2 shows the results. In the first eighteen days of employment those with the greatest deviation from the optimum visual pattern had a 61 per cent accumulation of accidents, those with moderate

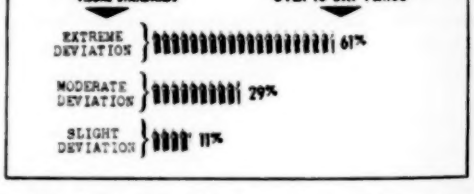

Fig. 2.—Ortho-Rater tests related to safety. (Figures 2 and 3 are from "Four Points to Safety," Safety Engineering, September 1945.)

deviation a 29 per cent accumulation and those with negligible deviation an 11 per cent accumulation—a difference of 50 per cent between the extreme groups. But again these sticklers for real validation said, "These groups will equalize if the follow-up is continued over a long period of time." This was not the case according to facts, not according to the results shown in figure 3. Over a thirty-eight day period these same three groups

had 106 per cent accumulation, 43 per cent and 31 per cent. There is a difference of 75 per cent between the extreme groups. This illustrates a technic of using cold facts and substantiating them—management's language.

A previous study by Purdue University on 8,000 workers in a steel mill revealed that patients with "serious injury" tend to overconverge at far and undercon-

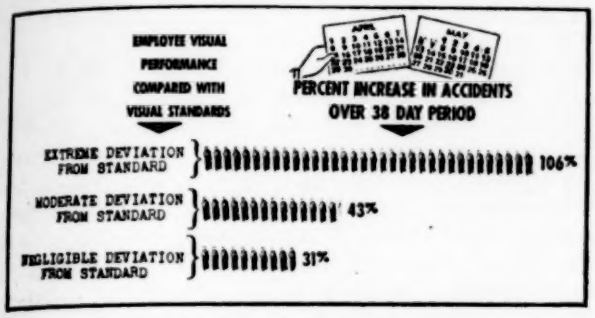

Fig. 3.—Ortho-Rater tests related to safety.

verge at near. Figure 4 shows that among those with the greatest change in convergence from far to near 4 per cent had had serious accidents, while among those with the least change in convergence nearly 9 per cent had had serious accidents, a ratio of more than 2 to 1.

When management invites me to talk to the foremen, to safety committees, to shop stewards, I accept, emphasizing the need of proper maintenance, adjusting and servicing of goggles (especially prescription goggles), thus insuring greater success to a program of eye safety. I find this to be an enlightening experience, often an exciting and amusing one. True, one needs to have a sense of humor, a real understanding of all the facts involved (no bluffing) and a fairly thick skin to toss back effective answers to questions coming from such an audience.

At a special conference in October in which all parties concerned will be represented, an effort will be made to formulate a basic policy and definite principles with reference to the sale of goggles, bargains and rebates, as well as proper methods for maintenance, adjusting and dispensing. It is earnestly hoped that existing unethical and improper practices will thereby be corrected.

ILLUMINATION AND COLOR

It is important to mention in passing, as it belongs in one's thinking of an industrial ophthalmologic program, that the field of illumination and the use of color in industry have moved forward with great strides. Fluorescent lighting, color contrasts, research on foot-candles required, so-called brightness contrasts and ratios, and the use of directional plus indirect lighting are a part of industrial seeing.

MINIMUM INDUSTRIAL EYE SERVICE

The minimum industrial eye needs of a large plant and of a small plant are identical. The steps in setting up any industrial eye program includes variables of the following:

1. One should make a leisurely tour of the industry in question. Nothing can be effectively planned or carried through to completion without this step. It has proved best to be accompanied by some one who understands plant operations and individual machines and their function. Neither the medical director of a large plant nor the top management makes the best guide.

2. It is valuable to take along a check list which can be devised very simply to suit one's own needs. Prior to the visit, management gives one a list of the name of each operation, the department and the job number. Moving from one job to another, one can check off what seems to be of greatest importance (visually speaking). For instance, it would seem that a turret lathe operator needs excellent distance acuity at his multiple work distances, that coordination and muscle balance are probably an important factor, that there are certain hazards such as flying particles and that a certain type of illumination is indicated. This does not provide the proper basis for setting up scientific visual standards for any job. This is one's personal memorandum to understanding and for the recommending of the broad foundation for an eye program. It is one's "know how."

3. Recommendations for choice of type of visual testing procedures, for preemployment and preplacement examinations of the eye, can then be based on one's knowledge of what seems to be the most urgent need. Here judgment is required, and sometimes one acquires judgment the hard way.

4. The compilation of statistical data secured by visual tests is an integral part of the usefulness of a program.

5. The type of procedure to be employed in establishing a corrective plan for each individual plant is based on the statistical findings and on local professional interest and skill.

6. When management pays for having the eyes of employees refracted, one must decide where the refraction is best made and what schedule is best suited to the plant and to the examiner. Community practices, urgency of needs, geographic location of plant, type

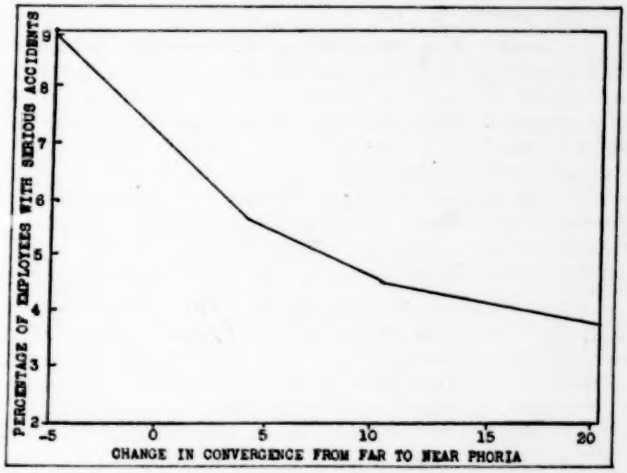

Fig. 4.—Relation between phorias and serious accidents (statistics from Purdue University).

and quality of available professional help—all are details to be considered.

7. Perhaps the most important part of an industrial eye program is the follow up and follow through. Just to test eyes, compile figures, refract eyes, order goggles or occupational glasses and stop there is to have produced a sterile, lifeless thing: one should keep interest alive, show results, find even better ways.

SOME SPECIAL SPECIFIC PROBLEMS IN PROCESS OF STUDY AND RESEARCH

1. One of the great fields for further research in industrial eye problems is the study of near vision visual performance. Here the great textile industries will be most greatly benefited, as will radar assembly and filament inspection and similar operations. Also the field is wide open for improved accuracy in testing equipment for use in examination of near vision function made in the office.

2. Another no man's land is in the field of radiation. Research work was done long ago by Dr. Verhoeff in his fundamental treatise and more recently by Drs. Cogan, Drinker and Kutscher. We, as ophthalmologists, are poorly equipped with facts when we are called on to testify before an industrial commission hearing the evidence for loss of vision due to infra-red or ultra-violet injury. Practical research done by and inside industry, studying variables in amount of radiation of actual welding operations, amount of energy effective at different work distances, findings with and without protection to the eye as actually used in a plant and not only so-called recommended procedures, the determination of exposure to infra-red in foundries, the part played by element of time, actual amounts of infra-red found—all this is urgently in need of further investigation and is in process of being organized. The lack of intelligence in radiation problems is revealed in the workmen's compensation cases carried to the highest court. It seems incredible but considerations which have proceeded through long laborious hours of discussion, hearing of evidence and weighing of facts all rest on our exceedingly flimsy foundation. Five cases carried to high courts were found to be concerned with strange side issues:

Case 1.—The main points involved and stressed are whether the flash sustained from another worker nearby was to be considered an accident or an occupational disease (Colorado Supreme Court).

Case 2.—In a flash case heard in 1929 the worker was given temporary total disability. In 1935 he entered a claim that the opposite eye was involved with loss of vision due to the 1929 exposure. Here attention was focused on whether the plaintiff had the legal right for a rehearing (Ohio).

Case 3.—The case of sudden loss of vision in the only good eye of a worker who had been exposed thirty minutes to the glare of an acetylene torch was carried to a high court, in spite of the presence of considerable illness, including syphilis. This did not prevent the award of total loss (state of Louisiana).

Case 4.—A case in which a moving picture operator exposed to the glare of carbon arcs claimed and received total disability on the basis of occupational disease producing the pathologic condition of cataract (New York). (Whether or not this person could have had normal vision with cataract extraction did not seem to figure in the picture at all.)

Case 5.—A motor tester exposed to a flash 3 feet away, who was already blind in his right eye as the result of glaucoma, claimed and was granted total disability and blindness in the left eye from a flash also (state of Pennsylvania).

3. Will ophthalmologists be interested in meeting the challenge of industrial eye problems? If so, can they meet it? The greatest interest that is being shown at the present time is among the younger men being discharged from the service. I hope that their interest will change the figures revealed by a survey two years ago. The Joint Committee of Industrial Ophthalmology asked the National Society for the Prevention of Blindness to send questionnaires to the ophthalmologists in this country. There are a total of 6,182 ophthalmologists (this group including eye, ear, nose and throat men). Questionnaires went out to 5,511. Returns were received from 559, and of these 399 (71 per cent) expressed an interest in enlarging their industrial practice. Of these 259 (44 per cent) indicated that they were familiar with eye hazards and visual requirements of plant operations. This is certainly a drop in the bucket. Even more significant is the fact that 352 (63 per cent) of these believe that individual refractions should be done by them and in their offices. We must, in line with the needs of industry and our own multiple problems, evaluate the use of the potential talents of optometrists in arranging a refractive service for industry. Many well trained ethical optometrists demonstrated their ability on Army and Navy assignments. Others have demonstrated their understanding of industrial eye problems, refracting and guiding an eye protection program in the critical war industries in this country. Programs such as were set up at Sperry Gyroscope, one of the outstanding industrial eye programs in this country, may well form the pattern that we shall need to develop. This phase of eye service to industry demands our earnest attention.

4. The programs set up by the War Production Board in cooperation with many government agencies, and under the sponsorship of the National Society for the Prevention of Blindness, revealed the present practices of industry. While only 10 per cent of the plants receiving questionnaires returned them, these 283 concerns totaled almost a million workers and the size of the plants varied from one employing 23 to one employing 65,000. As industries willing to reveal their statistics to a government agency would be among those who had the best practices, the facts shown here were most significant and indicate the enormous problems which face industry. I do urge that industry not be stimulated further, at the moment, to do something (other than modernizing protection of the eye and job placement) about its eye problems until provision has been made to meet the innumerable requests for properly training professional help.

5. The increasing need for professional help as expressed here leads directly into the need for increasing educational opportunities. A year ago 70 per cent of the approved medical schools sent the heads of their departments of ophthalmology to the Columbia course designed to acquaint them with the scope and content of industrial ophthalmology. This is a definite expression of interest by our medical schools which, though sadly tardy, gives recognition to the urgent needs of today.

6. Participation of ophthalmologists in planned medical conventions, safety conventions, seminars of industrial nurses, personnel and industrial relations groups, are all a part of the training of tomorrow's industrial ophthalmologists. In line with this also is the reading of much literature outside the medical journals and publications. Some of the best articles dealing with industrial eye problems have been published by management, personnel and safety periodicals as well as by journals of applied psychology. It is due to this great need for informal reports of "plant experiences," which are akin to case histories, that the Joint Committee is gathering together all available material for publication in a number of our medical journals.

CONCLUSION

It has been my earnest hope that by spotlighting just a few of the problems lying within the field of occupational ophthalmology, many ophthalmologists will catch fire and take hold—some of the younger men seem more than eager. The need is great; it is a part of the basic thinking in the era of atomic energy; it is exciting and fascinating work; some previously unorthodox procedures may need to be made good and used. It is—all of it—our challenge.

112 Rimbach Street.

ABSTRACT OF DISCUSSION

DR. DERRICK T. VAIL, Chicago: Dr. Kuhn has mentioned the clamor that industry is making on our doors, seeking help in the solution of its problems. The help is forthcoming in many fields. She touched on the magnificent work of Professor Tiffen and his punchcard system of job analysis in relation to ocular phases. But we are handicapped by our relatively small number. Dr. Cordes in his chairman's address summarized the past difficulties and the future possibilities, but the fact remains that at the moment we are caught short, so short that the training facilities are desperately handicapped and the number of ophthalmologists is at a minimum to answer the demands that are thrown on us from all sides. Dr. Parker Heath presented before the American Ophthalmological Society a scheme for training ophthalmic technicians under medical direction, which I think may be part of the answer to our difficulties. It is of interest to note that the American Ophthalmological Society endorsed this scheme unanimously, and it is my understanding that there will be something said about this particular phase before the section. However, the plan is to develop medical technicians who will be a real aid to ophthalmologists, and certainly industry will be able to use these workers under the direction of a competent consulting ophthalmologist who will have under his direction a number of industries in his particular area. That is one way of answering the need for personnel. Dr. Kuhn mentioned optometrists, particularly the decent fellows —and there are a number of them. We saw them in the Army. They were most useful and most valuable members of the armed forces. Without the use of these optometrists the overwhelming problem encountered by the Army would have been hopelessly bogged down. There is no reason that I can see why these optometrists cannot be used under the supervision of ophthalmologists in a proper way, so that this great work of industrial vision and industrial ocular problems can be carried out to a better condition. The last phase is the teaching of industrial ophthalmology in our medical schools. The point faced by us who are charged with the responsibility of teaching departments is whether we should devote any time to this subject in the undergraduate course or whether we should conserve our efforts in this line and direct them toward teaching in the postgraduate courses. A great deal of thought and attention should be devoted to this study. I am at the moment unable to make up my mind as to just what is the best approach to this problem from a teacher's point of view.

DR. A. C. DICK, San Diego, Calif.: All medically trained persons must become more cognizant of the meaning and importance of healthy industry to the stability of our form and manner of living together as a people. This will imply that the average doctor will have to spare a little time from the sanctuary of his office to learn more of the mechanical and human aspects of production matters. Certainly it will imply that he shall look on his average patient in a new light. By thinking of some of these matters in this way the doctor will make an enormous contribution to industrial efficiency, community stability and political sanity. Industry needs his help and during the war has come to recognize this need more definitely than ever before. When this call for help comes, as it will, what are the chances that it can be met? In general, the record of the American medical profession is such that we could state unequivocally that the answer would be in the affirmative. In highly integrated industry the health needs of the employee cannot be met without the assistance of highly trained specialists in the various fields of medicine. New and more effective procedures and processes have created new demands on the physical and mental adaptability of the worker. Therefore one who may have specialized in the field of ophthalmology will have received a certain insulation from the field of general medicine; but he has become, by reason of his special ability, much more intimately exposed to industrial or occupational medicine. He is the one on whom the industrial world will call for solution of its sight and seeing problems, and incidentally these are becoming of greater proportionate significance daily. There is a significant need for medical specialists industrially. Whatever effort is put forth will contribute both directly and indirectly to more than a correction of an isolated condition. Ophthalmologists, like other specialists, can contribute most if they can conceive of industry as a community function and translate their special knowledge in terms comprehensible and useful to the average citizen who works. For these reasons it has been a pleasure to be able to discuss this paper by Dr. Kuhn, for it contains material of more than passing significance.

DR. E. H. CARY, Dallas, Texas: Dr. Vail raised the point as to what could be done with the undergraduate. The trouble with medical education today is that a vast amount of information is to be given to medical students and we have attempted to give it to them in thirty-two weeks. With all the new knowledge to be presented to medical students, the specialties have been pushed aside. The student must be a well informed man in surgery, medicine, obstetrics and gynecology and what are known as fundamental subjects. In the Southwestern Medical College we recently discussed, and I think we shall put it into effect, a program for extending the medical course to forty weeks for the first year, forty-six weeks for the second year, forty-six weeks for the third year and forty weeks for the senior year. This permits the men who graduate to take their board examinations and enter hospitals as interns. But in extending the course we shall recapture some of the time which is so very much needed and which is so essential to give the specialists an opportunity to give the young medical man a general training which is worth while. Although a technician, such as an optometrist, may be in some instances capable of refracting an eye without having it properly relaxed, I cannot concede that he has the knowledge that is essential to aid accurately the people in industry. I feel that we should adopt a more extensive course, because most of our medical schools have full time teachers as professors and they have had their salaries materially increased as a result of the accelerated program. I take the position that those gentlemen should now take the opportunity to amplify the course in medicine so that it will proceed to the extent of some 178 weeks before graduation instead of 128. Not only will you have a fairly good doctor, a general practitioner, but if you extend the opportunity for the student so that he will have the clinical advantages and the clinical opportunities with the teachers in ophthalmology and other special subjects which we classify as specialties, you will have a well rounded man to go into industry with at least sufficient knowledge to be useful. I do not expect ever to make a real specialist of any man, because I have always known that first a man has to be thoroughly trained through his hospital internship. It may be general practice for some but at least following a wide experience in special hospitals to get special knowledge. However, it would be impossible ever to supply the number of men that have been spoken of this morning through the process which we have always had in mind and always adopted. If we can extend the course as I have outlined, I believe we can supply to industry men who will be far more capable of meeting the issues that might arise and doing it much more satisfactorily for the people who are to be served than we could do it through a program of using technicians.

DR. HEDWIG S. KUHN, Hammond, Ind.: I want to express gratitude for the support that has been given to the Joint Committee on Industrial Ophthalmology. I report the glad news of progress being made in England and I hope that Sir Stewart Duke-Elder will help us in joining hands to accelerate further the solution of our industrial ophthalmologic problems.

TREATMENT OF TUBERCULOSIS WITH STREPTOMYCIN

A Summary of Observations on One Hundred Cases

H. CORWIN HINSHAW, M.D., Ph.D.
WILLIAM H. FELDMAN, D.V.M.
Rochester, Minn.
and
KARL H. PFUETZE, M.D.
Cannon Falls, Minn.

The search for drugs effective in treatment of tuberculosis has long been under way, but significant progress toward a practical goal was not achieved until the modern era of chemotherapy reawakened interest in the subject. For more than sixty years it has been known that Mycobacterium tuberculosis was readily inhibited when growing in cultures, and a large number of substances have been found which have the property of inhibiting the growth of this organism, even in extremely high dilutions.[1] Until 1940 [2] a substance was not found which was capable of actually arresting experimental tuberculosis in the highly susceptible guinea pig.

The development of methods [3] which were adequate to assay the therapeutic potentialities of antibacterial drugs against experimental tuberculosis has made possible an extensive program of research which has steadily progressed toward attainment of a practical clinical goal. These methods led to the recognition of the sulfone series of synthetic drugs (sodium p,p'-diaminodiphenylsulfone-N,N'didextrose sulfonate, Promin; disodium formaldehyde sulfoxylate, Diasone; 4,2'-diaminodiphenyl-5'-thiazolesulfone, Promizole; 4,4'-diaminodiphenylsulfone and others) which were highly effective in treatment of tuberculosis in experimentally infected animals, but the clinical use of which was not feasible.[4] When these methods of assay were applied to streptomycin, soon after it was developed by Schatz, Bugie and Waksman,[5] its superior therapeutic potentialities were recognized promptly.[6]

We and our associates have been utilizing streptomycin clinically for approximately two years [7] and have treated 100 patients who had various types of tuberculous infection during this period.[8] Several of the patients had tuberculosis of more than one type or at more than one site (see the accompanying table). Streptomycin recently has been made available commercially, and it now appears advisable to record our observations in a widely distributed medical journal. In this paper we shall place emphasis on those types of tuberculosis which are usually treated by physicians and surgeons who do not limit their practice to phthisis.

The clinical use of streptomycin appears to be based on sound laboratory investigation. Observations on guinea pigs [6b] and on mice infected [9] with lethal doses of tubercle bacilli have shown that streptomycin may bring the disease to a state of arrest, even when severe experimental conditions were imposed. Our more recent observations have yielded even more impressive evidence of the striking antibacterial activity of streptomycin in vivo; resolution, fibrosis or calcification of lesions has occurred in all animals and apparent eradication of the infection in at least 30 per cent of the animals. Previously positive reactions to tuberculin tests have been reversed to negative reactions in those animals from whose organs Myco. tuberculosis could not be recovered by the most sensitive bacteriologic methods.

Tuberculosis Treated with Streptomycin: Summary of One Hundred Cases *

Type of Case	Number
Miliary tuberculosis and tuberculous meningitis	12
Nonsurgical pulmonary tuberculosis of adults	32
Ulcerating tuberculous lesions of respiratory tract	7
Tuberculous empyema	7
Tuberculous fistulas	15
Tuberculosis of the genitourinary tract	15
Tuberculosis of bones and joints	5
Surgical pulmonary tuberculosis of adults	7
Miscellaneous types of tuberculosis	11

* Eleven patients had tuberculosis of more than one type or location.

Streptomycin possesses the pharmacologic properties required of a substance to be used in the treatment of a chronic disease,[10] and recent accomplishments of the manufacturers have resulted in more purified and accordingly less toxic preparations than were formerly available. The drug is expensive to produce and difficult to procure in a quantity adequate for the treatment of tuberculosis. The entire output is now allocated by regulations of the Civilian Production Administration, for which Dr. E. O. Haenni is the director of the Drug Section of the Chemicals Division.

MILIARY TUBERCULOSIS AND TUBERCULOUS MENINGITIS

Twelve patients who had generalized hematogenous tuberculosis have been treated with streptomycin. Nine of these presented clinical evidence of meningitis, 2 had focal cerebral lesions of tuberculosis which were demonstrated at necropsy, and 1 had miliary tuberculosis without evidence of involvement of the central nervous system. Six of these 12 patients have died, and observations at necropsy in 5 instances have been

From the Division of Medicine, Mayo Clinic (Dr. Hinshaw) and the Division of Experimental Medicine, Mayo Foundation (Dr. Feldman).

1. Wells, H. G.: The Chemotherapy of Tuberculosis, Yale J. Biol. & Med. **4**: 611-626 (March) 1932.

2. Feldman, W. H.; Hinshaw, H. C., and Moses, H. E.: The Effect of Promin (Sodium Salt of p,p'-Diaminodiphenyl-Sulfone-N,N'-Dextrose Sulfonate) on Experimental Tuberculosis: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **15**: 695-699 (Oct. 30) 1940.

3. Feldman, W. H., and Hinshaw, H. C.: Chemotherapeutic Testing in Experimental Tuberculosis: Suggested Outline of Laboratory Procedures for Testing Antituberculosis Substances in Experimentally Infected Animals, Am. Rev. Tubere. **51**: 582-591 (June) 1945.

4. Hinshaw, H. C.; Feldman, W. H., and Pfuetze, K. H.: Present Status of Chemotherapy in Tuberculosis, Ann. Int. Med. **22**: 696-703 (May) 1945.

5. Schatz, A.; Bugie, E., and Waksman, S. A.: Streptomycin, a Substance Exhibiting Antibiotic Activity Against Gram-Positive and Gram-Negative Bacteria, Proc. Soc. Exper. Biol. & Med. **55**: 66-69 (Jan.) 1944.

6. (*a*) Feldman, W. H., and Hinshaw, H. C.: Effects of Streptomycin in Experimental Tuberculosis in Guinea Pigs: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **19**: 593-599 (Dec. 27) 1944. (*b*) Feldman, W. H.; Hinshaw, H. C., and Mann, F. C.: Streptomycin in Experimental Tuberculosis, Am. Rev. Tubere. **52**: 269-298 (Oct.) 1945.

7. Hinshaw, H. C., and Feldman, W. H.: Streptomycin in Treatment of Clinical Tuberculosis: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **20**: 313-318 (Sept. 5) 1945.

8. The streptomycin used in these experimental and clinical studies was derived from several sources. The earliest experimental studies were carried out with material kindly supplied by Dr. S. A. Waksman. Later Drs. Carlisle and Robertson of Merck & Co., Inc., Dr. Hazel of the Abbott Laboratories and Dr. Upjohn of the Upjohn Company made supplies available to us for clinical studies. From March 1, 1946 to Sept. 1, 1946 all supplies were allocated to us through the Committee on Chemotherapeutics and Other Agents of the National Research Council, Dr. Chester S. Keefer, Chairman.

9. Youmans, G. P., and McCarter, J. C.: Streptomycin in Experimental Tuberculosis: Its Effect on Tuberculosis in Mice Produced by M. Tuberculosis var. Hominis, Am. Rev. Tubere. **52**: 432-439 (Nov.) 1945.

10. Heilman, D. H.; Heilman, F. R.; Hinshaw, H. C.; Nichols, D. R., and Herrell, W. E.: Streptomycin: Absorption, Diffusion, Excretion and Toxicity, Am. J. M. Sc. **210**: 576-584 (Nov.) 1945.

recorded.[11] Five patients who are still living have been observed for periods ranging from two to ten months following the clinical diagnosis. In the remaining case, treatment has been under way for one month only.

Of greatest interest are the 5 surviving patients observed for from two to ten months whose previously progressive disease has been suppressed at least temporarily by streptomycin therapy. One patient who had miliary tuberculosis without meningitis has shown pronounced improvement, both clinically and roentgenographically, after two months of treatment. The other 4 had well developed tuberculous meningitis which gave all the cardinal evidences of this disease, including the usual symptoms (fever, stupor, headache and nuchal rigidity) and the usual abnormalities of the cerebrospinal fluid, which contained demonstrable Myco. tuberculosis. The symptomatic response of these 4 patients to treatment with streptomycin has been sufficiently consistent and prompt to be unmistakable, and the subsequent clinical course has been unlike anything previously observed in this disease in our experience. Symptomatic improvement has usually been observed within one or two weeks after administration of streptomycin was begun; fever has declined within two or three weeks, and the temperature has become normal within four to eight weeks after the initiation of treatment. A return of a sense of well-being and the disappearance of stupor, headache and nuchal rigidity have been associated manifestations. The condition of the cerebrospinal fluid has improved slowly, and some abnormalities have persisted in all patients. Change in the spinal fluid to nearly normal has occurred in 2 patients only. It has been impossible to demonstrate Myco. tuberculosis in the cerebrospinal fluid after several weeks of treatment of these surviving patients. The fact that the cell count or the protein content has remained high or the sugar content of the cerebrospinal fluid has remained low has been interpreted as evidence of possible persistent infection in these patients whose tuberculous meningitis has improved, even though the organisms can no longer be demonstrated by inoculation of guinea pigs or culture. Treatment of 3 patients has been discontinued after the completion of a six months' course of therapy. Two of these patients have remained well for two and three months respectively. Reactivation of the disease of the other patient occurred one month after treatment was stopped; therefore, treatment was resumed. This patient is still alive more than three months after such reactivation and ten months after admission, but actual recovery appears improbable. The life of these patients undoubtedly has been prolonged for at least several months, and the distressing symptoms of tuberculous meningitis have been relieved; but much more time must elapse before any of these patients will be classified as cured.

Residual neurologic disturbances are present in 3 of the 4 patients with arrested tuberculous meningitis. One patient is blind, and we believe that the blindness was caused by tuberculous retrobulbar neuritis. One patient is deaf, and there is a question whether the deafness is due to the streptomycin. The third patient has profound disturbances of cerebellar function. The remaining patient is clinically well, ambulatory and free of all symptoms but is still receiving treatment five months after admission, with severe symptoms of early tuberculous meningitis.

11. Baggenstoss, A. H.; Feldman, W. H., and Hinshaw, H. C.: The Effect of Streptomycin on the Pathology of Generalized Miliary Tuberculosis of Human Beings, Am. Rev. Tuberc., to be published.

One case of tuberculous meningitis arrested by treatment with streptomycin has been reported,[12] and we know of at least 6 other similar cases which have been reported to us by personal communication from various institutions.

The treatment of 4 patients has consisted of the intrathecal administration, by lumbar or cisternal puncture, of 100 to 200 mg. of streptomycin every twenty-four to forty-eight hours for two to six weeks. In addition, these patients received 2 to 3 Gm. of the substance daily by intramuscular injection, and this regimen has been continued for six months in the treatment of those who have been under observation for this long time. None of the patients who died had received intrathecal therapy, and none of those who received intrathecal therapy have died thus far. The clinical histories and observations at necropsy in those patients who died are discussed in another publication.[11]

In tuberculous meningitis maximal doses of streptomycin should be given both parenterally and intrathecally for prolonged periods. Frequently such treatment produces temporary clinical improvement which will persist for at least several weeks or months.

For miliary tuberculosis, early diagnosis and persistent treatment with maximal tolerated doses given parenterally should be undertaken. Clinical, roentgenographic and histopathologic evidences of healing trends have been observed, but actual cure has not yet been witnessed in our experience.

NONSURGICAL PULMONARY TUBERCULOSIS OF ADULTS

A total of 32 patients who have had pulmonary tuberculosis have been treated by us with streptomycin since December 1944. Patients with active, usually progressive cases of pulmonary tuberculosis in which we and our clinical associates [13] were of the opinion that rapid spontaneous improvement was unlikely to occur were selected for treatment with streptomycin. Cases in which nonspecific therapeutic measures or collapse therapy might contribute to the recovery of the patient were excluded from the series. Furthermore, cases in which surgical operation was employed were not included.

Of the 32 patients on whom operation was not performed, the pulmonary tuberculosis had reached a far advanced stage of development in 21, was moderately advanced in 9 and was minimal in 2 before treatment with streptomycin was begun. Constitutional symptoms such as fever, cough and loss of weight were moderate to severe in 27 patients. After treatment for from two to six months with 1 to 3 Gm. of the drug a day, definite roentgenographic improvement was observed in 25 patients, despite the unfavorable trends observed prior to treatment. Evidence that pulmonary cavities had closed was observed in 12 patients, apparently as a result of treatment; thick walled cavities persisted in 6 patients despite treatment, and in the rest cavitation was not demonstrable. Myco. tuberculosis disappeared from the sputum of 13 patients; in each of these instances this fact was proved either by culture or by inoculation of guinea pigs with aspirated gastric contents.

12. Cooke, R. E.; Dunphy, D. L., and Blake, F. G.: Streptomycin in Tuberculous Meningitis: A Report of Its Use in a One-Year-Old Infant, Yale J. Biol. & Med. **18**: 221-226 (Jan.) 1946.

13. Drs. H. J. Moersch, O. T. Clagett, H. G. Wood, H. W. Schmidt, A. M. Olsen and D. T. Carr of the Mayo Clinic, Dr. Magnus Petersen of the Rochester State Hospital and Dr. H. A. Burns of the Division of Public Institutions of the State of Minnesota have cooperated in the care of these patients.

Myco. tuberculosis continued to be found in the sputum of 15 patients with far advanced tuberculosis despite prolonged treatment, and in the remaining 4 patients the organisms were never demonstrated in the sputum, although the diagnosis of tuberculosis was undoubtedly correct.

Lesions of pulmonary tuberculosis were not observed to progress roentgenographically during treatment with streptomycin even in those cases which terminated fatally, with the exception of 1 instance mentioned hereafter of recurrent tuberculosis due to a drug-resistant strain of Myco. tuberculosis. In 7 cases the disease was classified as unimproved. Without exception these patients had far advanced lesions of long standing, thick-walled cavities and fibrocaseous lesions, which probably would not respond to any antibacterial therapy. Some of these 7 patients were subjectively improved, but this change frequently could be attributed to improvement in morale incident to alteration of treatment.

Reactivation of the disease attending discontinuation of treatment with streptomycin has been observed in 6 instances. Two of the patients promptly improved again when treatment was resumed, 1 failed to improve when a second course of treatment was given, and the remaining 3 did not receive further treatment with streptomycin. It appeared that the persistence of the organism in the sputum, uncollapsed cavities, emaciation and low natural resistance predisposed the patients to a recurrence of the disease after the discontinuation of treatment.

Five patients of this series who had pulmonary tuberculosis have died. Two received streptomycin until the end, and the other 3 did not have treatment during their last few months. Each of these patients had terminal, far advanced disease with involvement of the greater part of both lungs and was in an advanced stage of cachexia when treatment with streptomycin was instituted. There was temporary improvement for a few weeks in 2 of these patients, and in 2 the disease did not advance. The remaining case was of unusual interest because well defined improvement in the patient had occurred during a six months' course of treatment; reactivation of the disease took place four months later, and a streptomycin-resistant strain of Myco. tuberculosis was isolated. Despite a second course of treatment under these conditions, the disease followed a rapidly progressive course, due perhaps to an acquired resistance to streptomycin on the part of the infecting organisms.

In the selection of patients with pulmonary tuberculosis for treatment with streptomycin, preference should be given to those patients with progressive disease who cannot be treated effectively by conventional methods. Priority also should be given to those patients whose disease appears to be of such a character that it might be brought under permanent control with a few months of suppressive treatment with or without surgical intervention.

ULCERATING TUBERCULOUS LESIONS OF THE RESPIRATORY TRACT

Ulcerating tuberculous lesions of the respiratory passages, including the larynx,[14] hypopharynx, trachea and large bronchi, have been treated in 7 cases. Observations are still incomplete in 2 cases, but in the remaining 5 prompt improvement of the patients was observed and recurrences have not been noted, although treatment has been completed for a year or more in 4 cases.

TUBERCULOUS EMPYEMA

Seven patients with tuberculous empyema of long standing have been treated with streptomycin. Four of these were given the preparation intrapleurally only, and improvement was not observed beyond that which might be anticipated had lavage alone been employed. Three patients received treatment by both intrapleural and intramuscular routes, and only 1 of these improved unmistakably. In 1942, this 1 patient had required open thoracotomy with resection of three ribs and intercostal muscles for drainage of tuberculous empyema with mixed infection and large bronchopleural fistula. It was possible to apply the streptomycin to the pleural surfaces several times a day by means of an atomizer, and, in addition, large doses were given intramuscularly. The bronchopleural fistula closed promptly, and Myco. tuberculosis disappeared from the empyemic cavity after three months of treatment. This patient had been under observation for four years previously, and improvement had not occurred despite persistent treatment of several types.

It is surprising that the antibacterial effects of streptomycin are not more clearly shown in the treatment of tuberculous empyema, but this may be due to the fact that the pus of tuberculous empyema is usually acid in reaction, while streptomycin is much more active in neutral or alkaline solutions. Also, it should be recalled that tuberculous empyema is a granulomatous process and not a simple growth of bacilli in the empyemic fluid.

TUBERCULOUS FISTULAS

Fifteen patients with cutaneous fistulas from which purulent material containing Myco. tuberculosis drained have been treated with streptomycin. One of these had multiple lesions which involved the supraclavicular lymph nodes, the inguinal lymph nodes and the chest wall. Lesions were limited to the cervical and axillary lymph nodes in 6 patients, to the thoracic wall in 2, to the abdominal wall in 1 and to the scrotum in 2. Two patients had tuberculosis of the bones of the wrist, with draining sinuses, and 1 had a tuberculous infection of a wound in the scalp following craniotomy for tuberculoma of the brain. In the patient with tuberculoma of the brain, treatment with streptomycin was continued for six weeks only. Temporary neurologic improvement resulted, but this may have been due to the decompression operation. This patient died elsewhere six months later.

In each of the 15 patients a response to therapy has been observed within four to six weeks; this response was evidenced by the cessation of purulent drainage. If treatment was suspended at this stage of improvement, a tendency toward prompt spontaneous reactivation of the process was observed. When treatment was continued for several weeks after complete superficial healing had been accomplished, an indefinitely long remission of the disease has usually been observed. In 10 of the 15 patients the fistulas have healed and have remained closed for periods of four to twelve months, in 3 patients recurrent fistulas remain, and in 2 patients recent healing has occurred, but treatment is still under

14. Figi, F. A.; Hinshaw, H. C., and Feldman, W. H.: Treatment of Tuberculosis of the Larynx with Streptomycin: Report of Case, Proc. Staff Meet., Mayo Clin. **21**: 127-130 (March 20) 1946.

way. In order to achieve complete and prolonged healing of such lesions the administration of 2 Gm. of streptomycin per day for at least three or four months is recommended as an average dosage.

Streptomycin has appeared to facilitate the healing of previously refractory tuberculous fistulous tracts, especially those due to tuberculosis of the chest wall and tuberculous lymphadenitis. Treatment should be continued for several weeks after purulent drainage ceases in order to reduce the possibility of recurrence.

TUBERCULOSIS OF THE GENITOURINARY TRACT

The experience of our group in treatment of tuberculosis of the genitourinary tract has been recorded elsewhere,[15] and further observations on a total of 15 cases have confirmed the conclusion that streptomycin possesses some palliative value in the majority of cases of tuberculous cystitis and may bring the disease to a state of temporary arrest in a small minority of cases. Streptomycin is not curative of renal tuberculosis, in our opinion. More impressive symptomatic results might have been realized in cases of tuberculous cystitis had earlier cases been chosen in which there were less advanced fibrotic changes in the bladder wall.

In the types of cases chosen we have observed a decided tendency to recurrence of tuberculous bacilluria, even after the urine had been proved free of Myco. tuberculosis by the results of inoculation of guinea pigs. When the organisms reappear in the urine after prolonged treatment with streptomycin, they are likely to be resistant to the effects of the drug in vitro. Amelioration of symptoms, which has been observed in at least 50 per cent of the 15 cases, frequently has been prolonged. Two patients who were first treated more than eighteen months ago continue to experience considerable symptomatic relief, even though small numbers of Myco. tuberculosis occasionally appear in the urine.

Two of this group of 15 patients had fistulas of the scrotum from which pus containing bacilli related to tuberculous epididymitis drained. In each of the 2 these fistulas closed within a few weeks after the institution of treatment with streptomycin and have remained healed for six and ten months, respectively, after the discontinuation of treatment.

Patients with tuberculous cystitis are frequently improved at least temporarily by the use of streptomycin. The actual arrest of renal tuberculosis has rarely, if ever, been achieved by this treatment. Streptomycin therapy, therefore, cannot be regarded as a substitute for the surgical treatment of unilateral renal tuberculosis at this time.

TUBERCULOSIS OF BONES AND JOINTS

Tuberculosis of bones and joints has been treated in 5 cases. Observations are incomplete in 1 case because the patient is still under treatment. Apparent response of the patients to treatment has been noted, however, in the remaining 4 cases, which will be reported in collaboration with our associates in orthopedic surgery.

SURGICAL PULMONARY TUBERCULOSIS OF ADULTS

Streptomycin was combined with radical surgical measures in treatment of 7 patients who had pulmonary tuberculosis. The streptomycin was given both preoperatively and postoperatively; in some cases the main reason for postoperative administration of streptomycin was to combat postoperative tuberculous complications. It is believed that the drug contributed substantially to the recovery of the patients, and a more detailed report of the cases will be published with colleagues of ours who perform thoracic surgery.

MISCELLANEOUS TYPES OF TUBERCULOSIS

Because of the pronounced tendency to spontaneous healing of primary tuberculosis, it is difficult to evaluate the results of treatment in the 2 cases of primary pulmonary tuberculosis of childhood which were included in this series. One of these cases has already been mentioned, and enumerated, as an instance of tuberculous meningitis.

Tuberculosis of the peritoneum has been treated in 3 cases with apparently good results. Recent surgical treatment may have contributed to the recovery in 1 case. Tuberculous pericarditis also was present in 1 of these cases of peritoneal involvement and persistent postoperative tuberculous infection of the wound was treated with streptomycin; drainage ceased and systemic improvement occurred.

Three patients who had lupus vulgaris and 1 who had sarcoidosis were treated with streptomycin. Good results were obtained in 1 patient with lupus, and questionable improvement occurred in the remainder. These cases will be reported in more detail by our associates in dermatology.[16]

Three patients are being treated for ocular tuberculosis by our associates in ophthalmology, and results are not as yet fully evaluated.

DOSAGE, METHODS OF ADMINISTRATION AND TOXICITY OF STREPTOMYCIN

The dosage of streptomycin which we recommend at this time for treatment of tuberculosis of adults is from 1 to 3 Gm. per twenty-four hours. This quantity is divided into four or six doses, one of which is administered every four or six hours by deep subcutaneous or intramuscular injection. The solution for parenteral administration may contain from 100 to 250 mg. of streptomycin per cubic centimeter. Sterile water is the diluent of choice. Solutions containing 25 to 100 mg. per cubic centimeter may be employed topically, intrabronchially or in an aerosol spray. In the treatment of tuberculous meningitis, intrathecal injections of from 100 to 200 mg. of streptomycin dissolved in 1 to 5 cc. of cerebrospinal fluid or isotonic solution of sodium chloride are given every twenty-four to forty-eight hours by lumbar or cisternal puncture.

Treatment of ulcerating tuberculous lesions of the hypopharynx, larynx, trachea and bronchi may include both parenteral and aerosol treatment with streptomycin. The aerosol has been administered by means of a nebulizer in a manner similar to that employed in bronchiectasis.[17] For this, 20 cc. of isotonic solution of sodium chloride which contains 0.5 Gm. of streptomycin is used; 2 cc. is nebulized into the mouth each hour for ten hours of the day.

Treatment with streptomycin for prolonged periods, as is required for tuberculosis, has produced reactions

15. Cook, E. N.; Greene, L. F., and Hinshaw, H. C.: Streptomycin in the Treatment of Tuberculosis of the Urinary Tract, Proc. Staff Meet., Mayo Clin. **21**: 277-280 (July 24) 1946.

16. O'Leary, P. A.; Ceder, E. T.; Hinshaw, H. C., and Feldman, W. H.: The Treatment of Various Types of Cutaneous Tuberculosis with Promizole and with Streptomycin: A Preliminary Report, Arch. Dermat. & Syph., to be published.

17. Olsen, A. M.: Nebulized Penicillin: Preliminary Report of Its Role in the Management of Surgical Bronchiectasis, Proc. Staff Meet., Mayo Clin. **20**: 184-194 (June 13) 1945.

which, although incompletely understood, must be anticipated. These are of sufficient severity that treatment with streptomycin frequently should be denied to patients for whom the prognosis from conventional therapy is good. These reactions, however, are sufficiently mild to be disregarded in cases of progressive tuberculosis which is not amenable to other forms of treatment. The most frequent and uncomfortable reaction observed in our experience is disturbance of equilibrium. Effective compensation for this disturbance may occur, with eventual disappearance of symptoms. However, evidence of permanent neurologic abnormality frequently persists in the form of a diminished response to caloric stimulation of the vestibular apparatus.[18] We do not recommend that treatment be discontinued when disturbance of equilibrium is observed, for experience has shown that compensation occurs even though treatment is prolonged.

Other toxic manifestations previously described may be due to impurities in the streptomycin. Irritation at the site of injection is widely variable and inversely proportional to the purity of the product. Renal damage is not likely to occur, but until clinical studies on the prolonged use of purified preparations of streptomycin have been completed, it is recommended that renal function be observed closely. Histamine-like reactions are definitely caused by impurities and do not occur with preparations now available.

LIMITATIONS OF STREPTOMYCIN IN TUBERCULOSIS

It is wise to recognize as clearly as possible the limitations which are imposed on the treatment of clinical tuberculosis by chemotherapeutic and antibiotic agents and, especially, to emphasize the limitations and shortcomings of streptomycin. Unfortunately, tuberculosis in human beings pursues an insidious course; often it does not produce symptoms until irreversible destructive changes have been wrought in the tissues. The mechanical handicaps to healing brought about by the destructive and reparative forces involved frequently require surgical correction, and many forms of localized tuberculous infection have become primarily surgical diseases. It appears illogical to anticipate that the use of any antibacterial preparation could replace the surgical treatment of such lesions. It is more logical to anticipate that a bacteriostatic substance would widen the indications for surgical treatment if it will suppress the unfortunate trend toward rekindling of the infection produced by surgical manipulation of tuberculous tissues. Actual healing in tuberculosis must be accomplished by the slow processes of resorption, fibrosis and calcification, and the role of an antibacterial drug is that of blocking the paths for extension of the disease while these healing forces are operating.

Problems incident to the acquisition by Myco. tuberculosis of resistance to the effects of streptomycin loom large at this time. It appears that the metabolic block in bacterial metabolism produced by streptomycin is more easily overcome by all organisms susceptible to the antibacterial effects of this substance than is the block produced by other known antibacterial agents on organisms susceptible to them. This fact accentuates the importance of devising alternative methods of attack against the organism, to be brought into play when the effectiveness of streptomycin has been exhausted.

Experimental[19] and clinical evidence indicates that there is some limitation as to the duration of therapeutic effect in those instances in which the bacillus develops an acquired resistance to streptomycin. The duration of action of the drug is variable but is sufficiently prolonged to accomplish a favorable result in many clinical situations.

SUMMARY

Streptomycin is an antibacterial agent which possesses the unique ability to inhibit the growth of Mycobacterium tuberculosis in vivo, both experimentally and clinically. The manifestations of tuberculosis may be suppressed both in experimental animals and in man, with at least temporary retardation of the pathologic processes as judged by objective criteria.

In many instances streptomycin appears to suppress tuberculosis rather than to eradicate it, being apparently bacteriostatic rather than completely bactericidal in the concentrations which can be obtained in the tissues.

Streptomycin is recommended for more extensive trial in treatment of many forms of pulmonary and extrapulmonary tuberculosis because of definitely and consistently encouraging results attendant on its use in a series of 100 cases in the past two years.

Treatment of tuberculosis requires large doses of streptomycin (1 to 3 Gm. a day) for prolonged periods and should not be undertaken unless adequate amounts are likely to be available to complete a course of at least two to four months' duration (total requirements up to 360 Gm.).

Toxic manifestations should be anticipated in a majority of patients in whom such prolonged treatment is carried out. Disturbance of equilibrium is especially likely to occur and often persists for at least several weeks after the discontinuation of streptomycin therapy.

Treatment with this antibiotic should be postponed or denied to those tuberculous patients who are making satisfactory progress and who are likely to achieve the arrest of their disease as a result of conventional therapeutic methods. Streptomycin is not to be regarded as a substitute for other and proved effective forms of treatment of tuberculosis.

18. Brown, H. A., and Hinshaw, H. C.: Toxic Reaction of Streptomycin on the Eighth Nerve Apparatus, Proc. Staff Meet., Mayo Clin. **21**: 347-352 (Sept. 4) 1946.

19. Youmans, G. P.; Williston, E. H.; Feldman, W. H., and Hinshaw, H. C.: Increase in Resistance of Tubercle Bacilli to Streptomycin: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **21**: 126-127 (March 20) 1946.

Letters of Benjamin Rush.—Toward the end of May 1943 there opened at the best known auction house in New York a remarkable sale of American historical manuscripts. This was the sale of the Alexander Biddle Papers. . . . Alexander Biddle had married Julia Wilmer Rush, who brought with her a large segment of the papers of her grandfather Dr. Benjamin Rush. Some 400 lots in the sale consisted of letters to Rush from such friends as John Abigail and John Nathanael Greene, John Jay, Thomas Jefferson, Thaddeus Kosciuszko, Charles Lee, James Madison, James Monroe, Thomas Paine, David Rittenhouse, Anthony Wayne and John Witherspoon. The letters of all those named have always, for good reasons, been eagerly sought by collectors and institutions. The first among the approximately 125 Rush letters in the sale went for $100 or more apiece, some later ones went for $200 or more, and two of them—I am sorry to say they describe quarrels with other physicians—sold for over $300. After some study of the matter I am prepared to say they were worth the prices paid.—Butterfield, L. H.: Benjamin Rush: A Physician As Seen In His Letters, *Bull. Inst. Hist. Med.*, July 1946.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association and Hygeia, the Health Magazine
Chicago

(Continued from page 701)

(NOTE.—*Following is the fourth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 4. *The Principles of Medical Ethics*

Among the resolutions introduced in the National Medical Convention which assembled in New York in May 1846 was one which was to set a pattern of ideals for all the years that have followed. It read:

> that it is expedient that the medical profession in the United States should be governed by the same code of medical ethics, and that a committee of seven be appointed to report a code for that purpose at a meeting to be held in Philadelphia on the first Wednesday of May 1847.

The committee included Drs. John Bell, Isaac Hays and G. Emerson, Philadelphia; W. W. Morris, Dover, Del.; T. C. Dunn, Newport, R. I.; A. Clark, New York, and R. D. Arnold, Savannah, Ga. This committee presented its report on June 5, 1847 at Philadelphia.

In presenting the report Dr. Isaac Hays stated that justice required that some explanatory remarks should accompany it. The committee had examined a great number of codes of ethics adopted by different societies in the United States and found that they were all based on that of Dr. Thomas Percival and that, moreover, the phrases of this writer were preserved to a considerable extent in all of them. "Believing that language which had been so often examined and adopted must possess the greatest of merits for such a document as the present, clearness and precision, and having no ambition for the honours of authorship, the Committee which prepared this code have followed a similar course and have carefully preserved the words of Percival wherever they convey the precepts it is wished to inculcate. A few of the sections are in the words of the late Dr. Rush, and one or two sentences are from other writers." The committee said, however, that whereever it was thought that the language could be made more explicit by changing a word or even a part of a sentence, this was unhesitatingly done.

Dr. John Bell was a Philadelphia surgeon, graduated by the University of Pennsylvania in 1817. He had done good work as a writer and editor and had been associated with the production of a considerable number of books. He had also edited "Stokes' Lectures on the Theory and Practice of Physics" and Andrew Combe's "Treatise on Children." It is generally conceded that most of the work in the preparation of these principles of ethics had been done by Isaac Hays, editor of the *American Journal of the Medical Sciences* from 1827 to 1879.

Thomas Percival, from whom admittedly the committee drew extensively in preparing the first draft of the principles of ethics, was a graduate of Leyden in 1765 and was made a Fellow of the Royal Society of England in 1765 when he was 25 years old. In 1767, when he was 27 years old, Thomas Percival published a book of philosophic essays and commentaries on medical life. He conducted an extensive correspondence with John Hunter and William Withering, the latter the discoverer of the use of digitalis, and with Heberden, for whom the famous nodes are named. He was associated with Charles White, who unquestionably knew about the infectiousness of puerperal fever and who wrote important works on the subject before Semmelweis and Oliver Wendell Holmes. Thomas Percival gave much thought to the future of the medical profession. An argument started in the hospital in which he worked. This no doubt led to the codification of the principles which were the first formal code of ethics submitted to the English medical profession. In 1793 Percival was asked by the group associated with the Manchester Infirmary to draw up a series of ethical principles as a guide in the conduct of the hospital and of the infirmary. He worked three years, then drew a first draft which he circulated among his friends, including Charles White, Heberden, John Hunter and William Withering. He sent a copy also to Erasmus Darwin. All sent him their comments. Then he revised the manuscript and finally published it in 1803.

In 1823 the New York State Medical Society adopted a series of principles of ethics which were almost wholly similar to the code prepared by Thomas Percival. In 1832 the Baltimore Medical Society took Percival's series and adopted them for that society. When Isaac Hays presented the report of his committee to the convention of 1847, he too, as has already been noted, decided that little improvement could be made on the principles as set forth by Thomas Percival.

In the work "American Medical Biographies," by Howard A. Kelly and Walter L. Burrage, it is said that the name of Isaac Hays is always associated with that which is well written and worth reading in American medical literature. After graduation from the University of Pennsylvania in 1816 his father put Isaac Hays into his counting house, but one year of banking proved to be enough. Hays took up the study of medicine under Dr. Nathaniel Chapman, among the first of the presidents of the American Medical Association. In 1820 Hays took his M.D. at the University of Pennsylvania with a thesis on the subject of sympathy. Hays gained celebrity in surgery of the eye; he edited several books on diseases of the eye, physics and ornithology, and cooperated in the preparation of a dictionary of medical terms. He translated several important works of medicine from French into English and he began an American Cyclopedia of Practical Medicine and Surgery but got only as far as "A to Azygos." In 1833 he had published a work entitled

"Descriptions of the Inferior Maxillary Bones of the Mastodons" and he recorded the first case of astigmatism recorded in America.

In presenting the Code of Medical Ethics to the convention, a statement was made by Dr. John Bell in which he pointed out that medical ethics comprised not only the duties but also the rights of a physician. "As it is the duty of a physician to advise, so has he a right to be attentively and respectfully listened to." His introductory statement, after emphasizing the dignity of the medical profession, calls on the physician to give of his utmost for the advancement of the public health and the sustaining of the law. He recognizes the obligation on the physician "to bear emphatic testimony against quackery in all its forms." Even as early as 1847 he recognized the dangers of insanitary food and the purveying of nostrums. He did not hesitate to condemn members of other professions, and especially ministers of the gospel, for giving "their countenance and at times direct patronage to medical empirics both by their use of nostrums and by their certificates in favor of the absurd pretentions of these impostors." He condemned also the apothecaries who lend themselves to the sale and distribution of quack medicines and nostrums. And the final portion of his address is a plea to maintain the standards of the profession by unceasing vigilance so as to prevent the introduction of those who have not been prepared by a suitable preparatory moral and intellectual training.

In a volume called "Percival's Medical Ethics," Chauncey D. Leake has analyzed the growth and development of the "Principles of Medical Ethics of the American Medical Association." The criticism was made early that the committee headed by Bell and Hays had taken its code directly from the New York State code. However, as has already been pointed out, Isaac Hays stated clearly that the code had been derived from that of Percival and thus neatly reprimanded the New York and Baltimore societies, which adopted these codes without giving credit to Percival.

From time to time after 1848, circumstances developed which made necessary reconsiderations and modifications of the Principles of Ethics. In 1852 there was serious debate over the acceptance of homeopathic doctrines by some members of the medical profession. In 1882 delegates from the Medical Society of the State of New York presented a report which offered a simplified and brief system of medical ethics as a substitute for the national code. This was adopted. Then in June 1882, at the meeting of the American Medical Association in St. Paul, delegates from the Medical Society of the State of New York were refused admission. At that time Dr. Austin Flint wrote a commentary on the Code of Ethics in an endeavor to persuade the New York society to reenact the code of the American Medical Association. So fierce was this battle that a group was formed with the title "Society for the Prevention of the Reenactment in the State of New York of the Present Code of Ethics of the American Medical Association." The battle continued with pamphleteering, debate and discussion on both sides. At various meetings of the Medical Society of the State of New York the Code was voted in and voted out, and at one time a conservative group which found it impossible to reenact the national code in the original Medical Society of the State of New York withdrew and organized a rival New York State Medical Association.

Finally, in 1903 a special committee appointed by the American Medical Association made a report at the convention in New Orleans to which one of its members dissented. That member prepared what he considered to be a "suitable system of advisory precepts" in medical conduct. This was adopted as "The Principles of Ethics of the American Medical Association" and was considered to be much more satisfactory than the older code. Still further revisions were made in 1912.

A resolution passed by the House of Delegates of the American Medical Association in San Francisco in 1946 has called on the Judicial Council of the American Medical Association to consider again a rewriting and rephrasing of "The Principles of Medical Ethics."

The chief criticism made by Chauncey D. Leake in his consideration of the subject is the one which has been made frequently, namely that "The Principles of Medical Ethics" do not clearly differentiate actual principles of ethics from the rules of conduct and etiquette of the profession. Indeed, one rather wise commentator in the midst of the battle that was waged in New York, Dr. D. B. St. John Roosa, suggested that the only ethical offenses for which the medical profession should claim and promise to exercise discipline are "those comprehended under the commission of acts unworthy a physician and a gentleman."

The "Principles of Ethics" that now prevail emphasize first the duties of the physician to his patient. These duties include service as an ideal, patience and delicacy as highly desirable qualifications and full assumption of responsibility once a case has been undertaken. The "Principles of Ethics" emphasize that the physician is free to choose whom he will serve but point out that he should respond to any request for assistance in emergencies or whenever temperate public opinion expects the service.

The physician is told that he must be an honorable man and a gentleman and that he must conform to a high standard of morals and uphold the dignity of his profession. The solicitation of patients by an individual physician is considered unprofessional, but it is recognized that a man may conform to the customs of the community in which he lives.

Medicine has for years depended for its success on the personal relationship between physician and patient. Every article in the principle of ethics is planned to emphasize this relationship. "A pleased patient," as the "Principles of Ethics" repeatedly state, "is the best type of medical advertisement." From the very first the "Principles of Ethics" have sought to protect an uninformed public against the claims of the quack and the pretender. "It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment and remedies; to exhibit certificates of skill or of success in the treatment of disease; or to employ any methods to gain the attention of the public for the purpose of obtaining patients."

Again the "Principles of Ethics" recognized the importance of having adequate consultation whenever a physician is in doubt as to what is best for his patient. "In serious illness, especially in doubtful or difficult conditions, the physician should request consultations." And, the principles continue, "In every consultation the benefit to be derived by the patient is of first importance." The "Principles of Ethics" recognize that medical diagnosis is usually paid for insufficiently in comparison with the rewards of surgical technic. "The patient should be made to realize," say the "Principles

of Ethics," "that a proper fee should be paid the family physician for the service he renders in determining the surgical or medical treatment suited to the condition, and in advising concerning those best qualified to render any special service that may be required by the patient."

THE DOCTOR AND THE PUBLIC

The third phase of the principles of ethics is again a recognition of the duty of the physician to the public. He is asked to remember that he is a citizen and to aid in enforcing laws and in giving advice concerning public health. During an epidemic he must continue his labors for the alleviation of the suffering without regard to the risk of his own health or life or to financial return. He is asked to warn the public against the devices practiced and the false pretensions made by charlatans, and he is told finally that these principles do not cover all the obligations which he may have but are wholly a guide which will supplement the ordinary conduct of a gentleman and the practice of the Golden Rule. The last sentence reads "Finally, these principles are primarily for the good of the public, and their enforcement should be conducted in such a manner as shall deserve and receive the endorsement of the community."

(To be continued)

Clinical Notes, Suggestions and New Instruments

APPARENT SENSITIVITY TO AMIGEN

HAROLD J. HARRIS, M.D.
ONSLOW A. GORDON, M.D.
ROBERT GRAY, M.D.
Westport, N. Y.
and
LYMAN G. BARTON, M.D.
Plattsburg, N. Y.

A girl aged 17 took approximately 125 grains (8.1 Gm.) of phenobarbital with suicidal intent on Aug. 15, 1946. Coma rapidly ensued. She had successfully fought off attempts at lavage. There was temporary response to dextrose given by the intravenous drip method, but a fatal outcome still seemed likely on the fourth day of coma. Dosages of picrotoxin and caffeine were of questionable value. The blood pressure ranged from 100 systolic and 60 diastolic to 120 systolic and 70 diastolic, the temperature from 101 to 103 F. and the pulse rate from 120 to 140 per minute. Complete blood counts were not especially informative.

The administration of amigen [1] 5 per cent in 5 per cent dextrose was begun by the slow intravenous drip method on the evening of the fourth day. By the time that approximately 100 cc. of the solution had been administered, a chill occurred. The intravenous drip medication was discontinued. The temperature rose rapidly to 105.8 F. and the pulse rate rose to 164 or higher. The application of cold wet packs and the use of ice water enemas were followed by a gradual decline of the temperature to 103 F., at which point these measures were discontinued. Shock ensued, with an irregular thready pulse and a steady fall of the blood pressure to 70 systolic and zero diastolic. At that point the pulse could not be felt.

Epinephrine hydrochloride given intramuscularly resulted in a temporary response, the heart action becoming audible and a thready irregular pulse at the rate of 160 per minute being reestablished. Additional amounts of epinephrine and caffeine and sodium benzoate did not give further response. The respirations were extremely shallow and gasping. The extremities were cold, blue and mottled. Nikethamide (Coramine, pyridine-*B*-carboxylic acid diethylamide) was administered intravenously in doses of 5.0 cc. each when a fatal termination seemed inevitable. By the time about 1.0 cc. of Nikethamide had been given, concomitantly with the initiation of intravenous drip of 10 per cent dextrose in distilled water, the respirations became deeper and less labored. Improvement in the pulse rate and blood pressure was rapid. Additional Nikethamide was given intramuscularly in doses of 5.0 cc. to 6.0 cc. at irregular intervals, whenever respirations became embarrassed.

From that time on improvement was steady. Partial return to consciousness followed in about forty-eight hours, and speech returned slowly, in typical fashion, with long intervals of semicomatose states.

Radiographs taken at the bedside showed increased density in areas roughly corresponding to the upper and lower lobes of the right lung. Breath sounds were slightly increased in pitch, but other physical signs of a pneumonic process were lacking. Penicillin, 25,000 units every three hours, had been given intramuscularly since the second day of the coma as a precaution against possible infection of the respiratory tract. It is probable that the growth of any pathogenic organisms was prevented by this measure. The temperature slowly defervesced. Subsequent to the patient's recovery from the collapse which followed the use of amigen, respirations were never suggestive of an infectious pneumonic process. Mucus had been coughed up or aspirated in profuse quantities from the onset of coma, at first blood-tinged, then frothy and finally purulent. It was felt that this bronchorrhea was the cause of the physical and radiographic observations. The term "bronchorrheic pneumonia" is proposed to distinguish this type, probably of common occurrence in barbiturate poisoning, from "aspiration" pneumonia, hypostatic pneumonia or infectious pneumonia, either lobar or bronchial.

This patient was known to have been sensitive to horse serum. A severe serum sickness had followed the administration of antistreptococcus serum for erysipelas at the age of 10 months. There was no other history of allergy.

SUMMARY

A 17 year old girl, suffering from the effects of a lethal dose of phenobarbital, collapsed following the institution of a slow intravenous drip of amigen. Death seemed inevitable. Nikethamide in large doses apparently was effective in stimulating the failing respiratory rate and can probably be credited with averting a fatal termination.

CONCLUSION

Amigen may give rise to serious foreign protein reactions.

1. A pancreatic hydrolysate of casein containing amino acids and polypeptides.

INOCULATION TUBERCULOSIS

H. E. BASS, M.D.
New York

Inoculation tuberculosis, although infrequent, does occur.[1] A review of the literature indicates that a differentiation must be made between the true primary complex and reinfection tuberculosis. The occurrence of a tuberculous chancre and regional swelling of the lymph node is of great differential aid, especially when accompanied with a change from a negative to a positive tuberculin reaction.

The characteristics of the tuberculous chancre have been well described.[2] Stokes [3] reviewed the subject of primary inoculation tuberculosis of the skin. The following report of

1. Cameron, C.: The Point of Entry in Tuberculous Infection, Lancet **2**: 1275, 1943. Michelson, H. E.: The Primary Complex of Tuberculosis of the Skin, Arch. Dermat. & Syph. **32**: 589 (Oct.) 1935.
2. Goldberg, B.: Clinical Tuberculosis, ed. 3, Philadelphia, F. A. Davis Company, 1942.
3. Stokes, J. H.: Primary Inoculation Tuberculosis of the Skin with Metastasis to Regional Lymph Nodes, Am. J. M. Sc. **169**: 722, 1925.

a case is considered to be of unusual interest because of the circumstances incident to the occurrence of a typical cutaneous chancre with regional tuberculous lymphadenitis.

REPORT OF CASE

The patient was a former army officer, white, aged 25, without any previous significant medical history. He had not knowingly been exposed to tuberculosis. On Jan. 15, 1945 he received multiple superficial wounds of the face, in part from shell fragments and in part from splinters of wood from the barn in Belgium in which he had taken shelter. He was hospitalized, and fragments of metal and wood were excised from his face. On February 12 he returned to duty, all areas apparently fully healed.

On February 16 he first observed a tender swelling "like a boil" just lateral to the external canthus of the right eye, at a point where a fragment of wood had been excised. At the same time he noted a tender swelling below the right mandible. He received treatment by hot packs, but the swelling over the face and in the neck increased.

He was hospitalized on Feb. 24, 1945. On admission he was febrile and nauseated. He received intravenous fluids and penicillin, with prompt disappearance of fever and nausea. Two diagnostic needle aspirations of the swelling near the right eye were performed, but records of the results are not available. Under treatment with hot compresses, the facial lesion broke down and formed an ulcer, which measured ½ inch (1.27 cm.) in diameter. The edges were elevated, and the base did not bleed when rubbed. The node in the right anterior cervical triangle was the size of a small egg, and two marble-sized nodes also were found just above the right clavicle. It was noted that the appearance of the ulcer suggested a malignant lesion.

On April 10, 1945 the ulcer and the large cervical lymph gland were excised under general anesthesia. Microscopic examination revealed caseofibroepithelioid and epithelioid giant cell tuberculosis, involving 90 per cent of the lymph node. Ziehl-Neelsen carbolfuchsin stain revealed acid-fast bacilli. Examination of the skin revealed epithelioid giant cell and caseo-epithelioid tuberculosis. Acid-fast bacilli were found in the section.

A tuberculin test revealed a 2 plus reaction to first strength purified protein derivative of tuberculin. Examination of the blood showed: red blood cells 4,700,000, hemoglobin 90 per cent, white blood cells 7,500, polymorphonuclears 66 per cent, lymphocytes 32 per cent, and eosinophils 2 per cent. The sedimentation rate was 17 mm. (Westergren). He received three treatments with roentgen ray to the lesions on his face and neck, each treatment consisting of 75 r. He also received a short course of ultraviolet therapy.

At a follow-up examination on Aug. 31, 1945 there were two pinhead-sized, slightly depressed brownish lesions which, in the opinion of the skin consultant, represented active tuberculosis. These lesions were present on the surface of the scar over the right zygomatic area. On the right side of the neck there was a moderately indurated scar, 1 inch (2.54 cm.) in length. Two pea-sized nodes were palpable just above the right clavicle. On Sept. 3, 1946 the scar over the right zygomatic area was completely healed. The scar in the neck had not changed since the previous examination. The glands on the right side of the neck were small and had not changed appreciably in size.

COMMENT

This case presents the unusual aspect of clinically primary tuberculosis of the skin following a war injury. It is noteworthy that clinical symptoms appeared approximately one month following the injury. It would have been of great interest to determine whether the Mycobacterium tuberculosis bacilli which were found in both ulcer and gland were of the bovine or human type, but unfortunately this was not done.

266 West End Avenue.

Council on Industrial Health

THE RECOGNITION AND TREATMENT OF CARBON TETRACHLORIDE POISONING

This information circular was prepared by the Safety Research Institute and referred to the Council on Industrial Health and others for review and acceptance preparatory to publication.

CARL M. PETERSON, M.D., *Secretary.*

The industrial importance of organic solvents is constantly increasing. This increase is accompanied with a growing recognition that all organic solvents are toxic and with the widespread installation of protective controls. Cases of solvent intoxication continue to occur, however, as the result of accidents, lack of information, carelessness on the part of workmen and inadequate precautions on the part of small "incidental" users.

Carbon tetrachloride, because of its complete nonflammability and its desirable physical and chemical properties, is one of the most widely used organic solvents. It is employed as a dry cleaning fluid, as a metal degreaser, as a rubber solvent, as a fire extinguishing agent, as a constituent of household cleaning fluids and for a variety of other industrial and nonindustrial applications. Like many other useful products, however, it is not always handled properly, particularly by new users who may not have familiarized themselves with the nature and prevention of its toxic effects.

Physicians and nurses may find helpful this survey of the literature on the diagnosis and treatment of carbon tetrachloride intoxication, which has been prepared with the assistance of physicians, industrial hygienists and the manufacturers of the solvent.

THE SIGNS AND SYMPTOMS OF CARBON TETRACHLORIDE POISONING

Toxic reactions to carbon tetrachloride may result from a single brief exposure to a high concentration of the vapor, from prolonged or repeated exposure to a moderately high concentration or from regular daily exposure to low concentrations in excess of known or accepted safe limits; from repeated contact of the skin with the liquid, or from ingestion of the liquid. In addition, some persons show allergic-type skin reactions resulting from a single contact with the liquid or symptoms of intoxication from contact with the vapor even though it is below the normally dangerous limit.

Obese persons, alcoholic addicts and undernourished individuals are likely to be especially susceptible to carbon tetrachloride injury, as are those with diabetes, liver or kidney disease, jaundice, pulmonary or heart disease or peptic ulcers. The assignment of such persons to work where they may be exposed to the solvent can be avoided by preplacement physical examination.

The signs and symptoms of poisoning from carbon tetrachloride differ somewhat according to the nature of the exposure:

1. A single exposure to a high vapor concentration may cause a feeling of fulness in the head and mental confusion, followed by headache, dizziness, nausea, stupor or loss of consciousness. Death due to respiratory failure may follow if the person is not promptly removed to a safe area. A heavy exposure may result in the delayed appearance of systemic poisoning with liver and kidney symptoms.

2. Repeated or prolonged inhalation of air containing unsafe concentrations of vapor may cause headaches, fatigue, nausea, vomiting, dizziness, visual disturbances and coughing of bloody mucus, followed in severe cases by acute nephritis, jaundice or toxic hepatitis. Injury to the central nervous system may occur.

3. Repeated contact with the skin removes the sebum and thus may result in redness, roughness, chapping and subsequent infections. The statement occurs occasionally in the literature that symptoms of systemic intoxication may result from prolonged skin contact, particularly in cases of burned areas or open cuts or wounds. It may be that symptoms attributed to absorption through the skin are due to inhalation of vapor at the time of skin contact.

4. Cases of poisoning by ingestion have been reported following the use of carbon tetrachloride as an anthelmintic. Effects are nausea, vomiting, abdominal distress, diarrhea, bloody stools, unconsciousness or coma. Later effects may be jaundice, cirrhosis of the liver and damage to the kidneys, heart, adrenal glands or nervous system. Intake of more than 3 to 4 cc. orally may cause death.

Intoxication with any one of a large number of industrial chemicals results in symptoms and syndromes similar to those listed. Most organic solvents, including benzene, methyl alcohol and carbon disulfide, and many metallic poisons as well, cause headache, vertigo, nausea and diarrhea. Symptoms of liver damage have been reported among the effects of intoxication with a wide variety of substances, including arsine, chlorinated naphthalenes, the chlorinated ethanes and occasionally benzene.

In many instances of acute poisoning by carbon tetrachloride the patient or his associates will know what toxic agent is concerned, but when products carrying brand names or solvent mixtures may be involved or in chronic exposure cases, a referral to carbon tetrachloride usually cannot be made on the basis of symptoms alone. The safety department at the plant where the patient is employed, or sometimes the industrial hygiene division of the local or state health department or labor department, may be helpful in identifying the nature of the patient's exposure.

Such authoritative assistance may also be useful in case the physician is later called on to give legal evidence in connection with the case.

THE TREATMENT OF CARBON TETRACHLORIDE POISONING

Contact with the Eyes.—The first step, if carbon tetrachloride spills or splashes into the eyes, is to wash them with large amounts of water for at least fifteen minutes. It is advisable to use a low pressure supply of water at room temperature in order to minimize the pain and discomfort caused by this procedure. Thereafter, symptomatic therapy should be employed if indicated.

Contact with the Skin.—Wash the skin thoroughly with a mild soap and warm water. After this an ointment containing petrolatum or lanolin should be applied in order to replace partially the natural skin oils. For cases of frank dermatitis or for signs and symptoms of generalized poisoning, symptomatic treatment is recommended.

Inhalation of the Vapor.—A person showing symptoms such as headache, nausea, dizziness or unconsciousness should be immediately removed to an area where the air is fresh and uncontaminated by carbon tetrachloride vapors. He should rest quietly and be kept warm. In case breathing has stopped, artificial respiration such as that obtained by the prone pressure or by the Eve rocking method should be used. If oxygen inhalation apparatus is available, oxygen should be administered. If the patient is conscious, hot tea or coffee may be given as a stimulant. An alcoholic stimulant or epinephrine should never be given to a person overcome by carbon tetrachloride.

Persons with only mild symptoms of solvent intoxication usually recover uneventfully under symptomatic treatment if they are protected from further inhalation of excessive amounts of solvent vapors. In more severe cases in which there are indications of liver or kidney involvement, carefully considered therapy is required. Hospitalization may be advisable for persons suffering from acute exposure.

Ingestion of the Liquid.—The first step is the prompt elimination of unabsorbed portions of the solvent, if it is suspected or known that a person has swallowed carbon tetrachloride. The patient should be made to vomit by drinking a glass of mustard water, lukewarm salty water or warm soapy water. If necessary the patient should be encouraged to stick his finger down his throat to induce vomiting. This procedure should be repeated at least three times. Following this, 1 tablespoon of epsom salt in water should be administered. (CAUTION: NEVER GIVE ALCOHOL, FATS, OILS OR EPINEPHRINE TO A PERSON WHO HAS BEEN EXPOSED TO CARBON TETRACHLORIDE.)

Symptoms of systemic illness should be watched for. They may develop quickly or they may be delayed several days.

SYSTEMIC THERAPY

The survey which follows is intended merely as a guide to the literature which has been published on this subject.

Davis and Hanelin,[1] who studied the problem of therapy after successfully treating a patient severely poisoned by inhalation, with renal involvement, made the following recommendations:

"Immediate removal or withdrawal of the poison is essential to successful treatment. If one bears in mind the complex clinicopathologic picture and disruption of the normal body chemistry, the treatment resolves itself into the following procedures:

"1. Intravenous hypertonic glucose and Hartman's solution to combat acidosis and liver dysfunction.

"2. Insulin in small doses, usually 2 to 3 units of U 20, to facilitate carbohydrate, fat and protein metabolism.

"3. Calcium gluconate[2] or calcium lactate, as recommended by Minot[3] and Cutler.[4]

"4. Papaverine hydrochloride or sulfate, an alkaloid of opium, ½ grain [32 mg.] intravenously where coronary, kidney and spastic states are present.

"5. Sodium decholin as a diuretic to facilitate the action of papaverine." [Some authorities state, however, that sodium decholin is given as a cholagogue; it may have slight diuretic effect, but diuretics do not facilitate the action of papaverine.]

"6. The xanthine diuretics to relieve the coronary embarrassment and to facilitate diuresis; however, we think the papaverine effect is slightly better.

"7. Never use epinephrine, since the Jourdans[5] have observed syncope subsequent to its use in carbon tetrachloride poisoning.

"8. Methylene blue may be used as recommended by Nelson,[6] but we have had no experience with this method." [Recent reports indicate that the use of methylene blue may be followed by untoward developments.]

"9. Oxygen inhalation may be necessary if pneumonic symptoms are present.

"10. The administration of a high carbohydrate diet is essential.

"11. Blood transfusion may be necessary for anemia."

According to Allison[7] "two drugs, calcium and glucose, are definitely indicated in the treatment of carbon tetrachloride poisoning."

Insulin and diuretics may not be necessary in every case. The danger of administering epinephrine in cases of carbon tetrachloride poisoning should be emphasized.

The amino acid methionine (dose 2 Gm. or more daily) has recently been used with success in therapy of several cases of carbon tetrachloride poisoning. Based on animal experimentation, treatment with choline chloride (2 to 5 Gm. daily) and cystine, together with a high protein, high carbohydrate, low fat diet, is suggested by one authority. A case of acute systemic poisoning resulting from accidental ingestion of a sizable amount of the solvent, reported by Beattie, Herbert, Wechtel and Steele,[8] was successfully treated with a combination of casein digest and methionine. Subsequently a series of 6 patients, 2 of them acutely ill, who had suffered industrial exposures to extremely high concentrations of carbon tetrachloride vapor, were successfully treated by Eddy[9] with intravenous glucose, a high protein, high carbohydrate and low fat diet, together with methionine, in doses of 2 Gm. every four hours. The most seriously ill of these patients received 68 Gm. of methionine during the course of treatment.

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1. Davis, George G., and Hanelin, Henry A.: Carbon Tetrachloride Poisoning, Indust. Med. **6**: 24 (Jan.) 1937.
2. Ten cc. of a 10 per cent solution of calcium gluconate intravenously two or three times daily, with 12 Gm. of calcium gluconate or 8 Gm. of calcium lactate by mouth, is recommended by R. T. Johnstone (Occupational Diseases, Philadelphia, W. B. Saunders Company, 1942).
3. Minot, A. S.: The Effect of Calcium on the Toxicity of Carbon Tetrachloride, Am. J. Physiol. **81**: 502, 1928.
4. Cutler, J. T.: Influence of Diet on Carbon Tetrachloride Intoxication in Dogs, J. Pharmacol. & Exper. Therap. **45**: 209-226 (June) 1932.
5. Jourdan, F., and Jourdan, F.: Syncopes adrénaline-mono-di et tetrachloromethaniques (syncopes caused by epinephrine associated with carbon tetrachloride), Compt. rend. Soc. de biol. **107**: 1541-1542 (Sept. 18) 1931.
6. Nelson, Robert Lyman: Methylene Blue in the Treatment of Carbon Tetrachloride Poisoning, Minnesota Med. **17**: 344 (June) 1934.
7. Allison, B. R.: The Treatment of Acute Carbon Tetrachloride Poisoning, with a Report of 2 Cases, Ann. Int. Med. **16**: 81-93, 1942.
8. Beattie, J.; Herbert, P. H.; Wechtel, C., and Steele, C. W.: Studies on Hepatic Dysfunction: 1. Carbon Tetrachloride Poisoning Treated with Casein Digest and Methionine, Brit. M. J. **1**: 209 (Feb. 12) 1944.
9. Eddy, James H.: Carbon Tetrachloride Poisoning: A Preliminary Report on One Use of Methionine in Hepatitis, J. A. M. A. **128**: 994-996 (Aug. 4) 1945.

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SATURDAY, NOVEMBER 30, 1946

HEALTH AND WELFARE IN EMPLOYMENT CONTRACTS

The growing interdependence between industrial medicine, community medical services and public health administration was never more clearly demonstrated than in the negotiations resulting in the National Bituminous Coal Mines Wage Agreement. The terms of this contract between the mine workers and the government acting as operator of the soft coal mines are well known. They range from long overdue revision of safety codes and workmen's compensation benefits to direct participation by the union in the administration of funds for medical and hospital care and for general welfare. The medical profession seems to be sympathetic to all bona fide efforts to improve working and living conditions. The Council on Industrial Health, the Board of Trustees and the House of Delegates of the American Medical Association have approved the general policy of cooperative industrial health planning by management, labor and medicine, provided scientific and ethical standards are maintained.

The results of the comprehensive survey and study of the hospital and medical facilities, medical treatment, sanitary and housing conditions in the bituminous coal areas described by Boone elsewhere in this issue are indicative of the needs. The purpose is to raise the level of these facilities to recognized American standards The survey teams supplied by the Bureau of Medicine and Surgery of the U. S. Navy will present an objective report. Past investigations of the coal mine areas, and no doubt the present one, call attention to the shortcomings of contract practice, the advantages and disadvantages of industrywide medical and hospital care plans, the need for greatly expanded medical supervision over the physical status of workers and their working environment, the shortages in medical personnel and hospital facilities and the serious deterioration of standards of public health administration in the coal regions.

In spite of impending legislation, health and welfare are likely to be important factors in future collective bargaining. Labor may ask for greater direct participation not only in industrial medical service but in plans for general medical care. Both the Council on Industrial Health and the Council on Medical Service have been actively concerned with the medical implications in the coal mine wage agreement and the probable extension of similar contracts to other occupational groups. Herein lie many opportunities for constructive medical leadership. The medical profession obviously has great but not complete responsibility for standards of medical care and public health services. Enlightened elements in the community must assume their share of this burden, particularly in adequate local support. As far as the coal mine region is concerned, an early conference representing employers, employees and the medical profession is urgently indicated.

IMMUNOLOGIC ROLE OF MINERALS AND AMINO ACIDS

The association of famine with infectious diseases [1] and the many examples of increased susceptibility to intercurrent infection evidenced by hypoproteinemic patients [2] indicate a relationship between dietary factors and bacterial resistance. In his 1942 presidential address before the American Association of Immunologists Cannon [3] of the Department of Pathology, University of Chicago School of Medicine, suggested a theory that would account for this relationship. He pictured antibodies as specifically modified humoral globulins whose formation is dependent on protein intake and protein reserves.

Cannon and his associates [4] showed that decreased protein reserves brought about by prolonged low protein diets leads to a definite decrease in specific antibody production in laboratory animals. The antibody producing mechanism is not permanently damaged by such depletion, as shown by the fact that the antibody function may be restored to its original level by ingestion of adequate amounts of high quality proteins,[5] protein hydrolysates [6] or amino acids.[5] Increased antibody production is noted as early as two days after beginning this repletion and is restored to nearly normal by the end of seven days.

In a typical experiment, several groups of rats were placed on a low protein diet for one hundred and seventy-three days. During this time they lost some 35 per cent of their original body weight. There was a

1. Cannon, P. R.: Scient. Monthly **56**: 5 (Jan.) 1943.
2. Cannon, P. R.: J. Am. Dietet. A. **20**: 133 (March) 1944.
3. Cannon, P. R.: J. Immunol. **44**: 107 (June) 1942.
4. Cannon, P. R.; Chase, W. E., and Wissler, R. W.: J. Immunol. **47**: 133 (Aug.) 1943.
5. Wissler, R. W.; Woolridge, R. L., and Steffee, C. H.: Proc. Soc. Exper. Biol. & Med. **62**: 199 (June) 1946.
6. Wissler, R. W.; Woolridge, R. L.; Steffee, C. H., and Cannon, P. R.: J. Immunol. **52**: 267 (March) 1946.

parallel fall in the percentages of hemoglobin and serum protein. Certain of these depleted animals were then changed to the same low protein diet, in which a mixture of sixteen crystalline amino acids modeled after the amino acid composition of casein was substituted for the same weight of corn starch.

On the seventh day of this amino acid feeding each animal, together with an equal number of depleted controls, was injected intravenously with 1 cc. of 0.25 per cent washed sheep erythrocytes. Blood for antibody titration was taken at periodic intervals during the next ten days. The average maximum hemolytic titer of the depleted controls was 100 units. With animals given the amino acid feeding the average titer was between 500 and 600 units. The substitution of crystalline amino acids for carbohydrates thus increased antibody production at least fivefold. As much as a tenfold increase in antibody production was demonstrated in certain repletion experiments with high grade proteins (dehydrated beef) and a twentyfold increase with protein hydrolysate (amigen).

Cannon pictures his data as confirmation of his theory that antibody production is dependent on an adequate supply of essential amino acids coming either from food or from protein reserves. He believes that these repletion tests have a practical bearing on prophylaxis under famine conditions and on the preparation of debilitated patients for vaccination or surgical operations. These observations are applicable to man, as shown by Krebs[7] of the Department of Medicine, Washington University School of Medicine, who tested a patient with uncomplicated nutritional hypoproteinemia. The patient's gamma globulin was but 0.15 Gm. per hundred cubic centimeters, or about one-fourth normal. The patient was vaccinated against typhoid by three weekly injections of 1 billion killed typhoid bacilli. After completion of this immunization, the patient's serum did not contain a trace of antityphoid agglutinins. Detailed studies of the role of individual amino acids in specific antibody production are now in progress. Preliminary tests suggest that only eight of the sixteen amino acids in casein are essential for antibody production.[8]

A second, equally promising, new lead in nutritional immunity is reported by Elvehjem and Clark[9] of the Departments of Biochemistry and Bacteriology, University of Wisconsin Medical School, as a result of their study of the role of minerals in antiviral immunity. Eleven hundred Swiss mice from 21 to 24 days old were divided into groups of 20 to 35 mice each by the split litter technic, with consideration for sex and weight. The control mice were given a complete synthetic diet plus 4 per cent optimum salt mixture. Other groups were fed on the same ration, in which one or more of the essential minerals was reduced to a minimum. After eight to fifteen days on this depletion diet each animal was injected intracerebrally with a standard dose of Theiler's neurotropic virus.

In a typical experiment five groups of mice were placed on diets containing 0, 5, 15, 30 and 100 per cent of the optimum amount of potassium. Twenty-six per cent of those on the control (optimum) potassium diet became paralyzed within five days after inoculation, increasing to 91 per cent by the end of ten days. Among those without potassium, none became paralyzed before the sixth day, increasing to but 32 per cent by the end of ten days. In another group deprived of both sodium and potassium for twelve days only 18 per cent became paralyzed after inoculation with this neurotropic virus. Animals given intermediary doses of potassium showed intermediary percentages of paralysis.

Similar increases in natural resistance were shown in mice after ten to fifteen days of restricted intakes of phosphorus. A slightly less increased resistance was shown after restricted intake of sodium. Restricted intakes of calcium, magnesium or chlorine for the same length of time did not cause any change in antiviral resistance.

7. Krebs, E. G.: J. Lab. & Clin. Med. **31**: 85 (Jan.) 1946.
8. Cannon, P. R.: University of Chicago Round Table, Sept. 8, 1946.
9. Lichstein, H. C.; McCall, K. B.; Kearney, E. B.; Elvehjem, C. A., and Clark, P. F.: Proc. Soc. Exper. Biol. & Med. **62**: 279 (June) 1946.

THE COMMISSION ON HOSPITAL CARE

The Commission on Hospital Care has just made available a condensation of the report of a two year study of "Hospital Care in the United States." The 700 page report offers 185 conclusions and recommendations for bringing better hospital care to the American people. Thomas S. Gates, LL.D., Philadelphia, chairman of the Commission on Hospital Care and chairman of the University of Pennsylvania, said "If this program fulfils the objectives it will become the blueprint for a voluntary organization and development of hospital services and facilities that will offer all people everywhere within our country an excellence of hospital care never heretofore attained." The Commission on Hospital Care was established as an autonomous study group at the suggestion of the American Hospital Association. The two year study was financed by contributions of $35,000 each from the W. K. Kellogg Foundation, the Commonwealth Fund and the National Foundation for Infantile Paralysis. The U. S. Public Health Service cooperated by assigning personnel to assist. The committee collaborated with local state groups in detailed studies of their needs and conducted a "pilot study" of Michigan assisted by the Michigan Hospital Association and state agencies. From experience in Michigan the commission developed its present report.

Soon after organization of the commission, Senators Hill and Burton introduced the legislation which culmi-

nated in the Hospital Survey and Construction Act. Every state in the nation now has inaugurated or is organizing its own survey. The Hospital Survey and Construction Act authorizes $3,000,000 in federal assistance funds for surveys and $75,000,000 annually for each of five years for assistance in the actual construction of hospitals and public health centers, this amount to be augmented two to one by state or private funds. Thus the total amount of construction envisioned in the acts amounts to $1,125,000,000.

The conclusions and recommendations of the commission propose that governmental general hospitals in areas not adequately served by nongovernmental hospitals should function as community institutions but should not expand where nongovernmental facilities are meeting the need. Voluntary, nonprofit hospitals should be used to provide care to beneficiaries of the government whenever possible. The commission urges much closer coordination of special institutions (such as those for the care of the tuberculous, other chronically ill and nervous and mental patients) with general hospitals. The managing boards of hospitals, including governmental, church and private hospitals, the commission feels, should include representatives of the public. General hospitals, the commission holds, should make proper arrangements for the care and treatment of communicable diseases and for acute infantile paralysis. Either the special communicable disease hospitals now operated by cities, counties and states should be discontinued or their service should be expanded to provide care for other types of illness.

The commission proposes that hospitals make their diagnostic facilities generally available to all competent doctors in the community and that diagnostic clinics be established in the interests of both doctors and patients. When possible and desired, hospitals should provide office space for doctors and, when conditions permit, combine their efforts with those of the medical profession toward the extension of group medical practice. Rehabilitation of patients after illness, health education of both patients and the public, and coordination with public health departments are matters to which hospitals should give detailed consideration.

The report outlines a number of proposals for the registration of hospitals and for appraising the quality of the care they provide. All institutions providing overnight bed care for the sick should be licensed and should be subject to inspection by a state authority having the counsel of hospital administrators and professional personnel. To attract physicians and nurses to rural areas, the report favors special inducements, including regular visits to rural institutions by members of the faculties of medical colleges for clinics and educational meetings. Separate Negro hospitals should not be developed except in communities where such hospitals are required by law. In the latter instances as good hospital service for Negro patients as for white patients should be maintained. The report proposes the admission of qualified Negro physicians to hospital staffs, an increase in the number and employment opportunities of Negro nurses and full educational opportunities for Negro physicians and nurses. For better service to the people, the report urges interchange of hospital services and equipment among institutions to reduce costs and also the establishment of coordinating councils to assist close working relationships.

The report outlines principles which the commission believes should form the basis of any system of payment which may be adopted to insure wide distributions of hospital care and to make possible the maintenance of high standards of service. Federal aid may lift the level of hospital care in the low income states to a standard which would insure the good health of the nation. Concerted efforts need to be made by both governmental and private agencies to extend membership to nonprofit prepayment plans, according to the commission, until some other more satisfactory and comprehensive means are developed to meet all the needs of all the people. It recommends that any legislation which prescribes that hospital care insurance shall be obligatory should permit its purchase from any agency, public or private, which conforms to established standards of service and operation.

Citing the need for replacement of a large number of existing hospitals, the commission explains that perhaps 25 per cent of all hospital beds are in this category. The pilot study in Michigan yielded data which, projected for the nation as a whole, "indicate that the public need would be better served by approximately 40 per cent fewer but larger hospitals." At present costs the construction and equipping of the proposed new hospital facilities would approximate $1,800,000,000, the commission estimates. Operation of these additional facilities would add about $375,000,000 a year to the nation's hospital bill for the care of acute general illness. The nation's bill for care in general hospitals now amounts to some $1,006,000,000 annually. Another half billion dollars is expended yearly for the care of nervous and mental diseases, tuberculosis and other special illnesses.

While the report is concerned basically with general hospitals, it estimates that there is a need for 45,000 additional beds for tuberculous patients and it recommends that they be established in or near general hospitals where these can be converted to other use as the prevalence of tuberculosis declines. It cites an apparent need for additional nervous and mental facilities but states that detailed study and reorganization of methods of treatment and administration should come first.

Current Comment

DOCTORS THEN AND NOW

The centennial year of the American Medical Association will be recognized in a series of broadcasts over the stations and networks of the National Broadcasting Company; the title is "Doctors Then and Now." The theme and subtitle of the series will be "One Hundred Years of Progress in American Medicine." This broadcast, announced in detail on page 648 of THE JOURNAL, November 16, will be developed regionally. The progress of medicine in various areas of the United States will be recounted with the cooperation of the state medical societies. The event chosen by the medical profession in each region as its most significant or most interesting contribution to the progress of American medicine will be dramatized. The dramatization will come from Chicago, using the facilities of the National Broadcasting Company. Having pictured "Doctors Then" the broadcast will switch by means of specially leased wires to a radio station in the area which is the topic of that week's presentation. There a physician will be waiting to make a rapid summary of "Doctors Now" in that area. Each of these speakers will be a nominee of the medical profession in the area. A special mailing piece is being prepared to point up progress in American medicine in the hundred years since the American Medical Association was organized. These mailing pieces will be sent from the Chicago headquarters in response to inquirers who write for further information. The mailing pieces will also be available in quantities at a nominal charge for medical societies who choose to take over the distribution in their own area. Dates for the various regional broadcasts will be made known to medical societies in the respective areas in plenty of time for them to give wide publicity to these events. Publicity by state medical societies and local societies is envisioned not only through publications which reach the doctor but through press releases, local broadcasts, announcements by speakers and in any other way which seems most feasible locally.

THE NATIONAL CONFERENCE COMMITTEE ON WORKMEN'S COMPENSATION

The Council on Industrial Health was established in the structure of the American Medical Association to bring about better clinical and administrative care of persons injured by industrial accidents or incapacitated by occupational disease. The efforts to accomplish this purpose have recently been formalized through the organization of a National Conference Committee on Workmen's Compensation. First steps were taken in 1944, when representatives of the International Association of Industrial Accident Boards and Commissions, of the insurance companies' Combined Claims Committee and of the Council on Industrial Health of the American Medical Association outlined the need for a joint approach to the problem and elaborated a twelve point program. The simplification and uniformity of forms for reports, the adoption of a standard nomenclature and statistical methods, medical testimony, disability evaluation, rehabilitation, elevation of standards of medical care for the industrially disabled and greater participation in administration by medically trained people with essential administrative qualifications are problems of special interest to the physician. Most of these activities have been assigned to subcommittees which are empowered to seek technical advice and assistance from other interested groups and agencies. Other committees are concerned with administrative functions, for example, more prompt payment of compensation benefits and reductions in hearings and appeals. Since the early steps of organization, invitations to participate have been extended to the two national labor groups, the National Association of Manufacturers, the Chamber of Commerce of the United States, the Bureau of Labor Standards of the United States Department of Labor and more recently to the National Association of Self Insurers. The results of committee investigation and specific recommendations are to be submitted to each participating organization for additional study and debate and, if necessary, ratification. Already some excellent foundation work has been accomplished. Medicine has much to contribute in the broad field of compensation administration and, even more, in the intimate details of case management. One of the principal planks in the program of the Joint Conference Committee states that the work of the committee must be fundamentally in the best interests of the individual worker.

THE CARE OF CHILDREN IN DAY NURSERIES

The great influx of married women into industry during the war years led to a rapid increase in day nurseries, many of which were poorly equipped and inadequately staffed. In some of these institutions conditions existed which were reminiscent of the novels of Charles Dickens—they were being operated largely for the profit of the proprietor and with little if any attention to the needs of the children. Even in the best of these nurseries, problems of communicable disease control and of nervous fatigue brought about by an excessively stimulating environment were serious and the need for a planned and cooperative attack on these problems became evident quite early in the development. Two pamphlets recently published by the Child Welfare League of America, Inc., offer many useful suggestions and guide lines for physicians, educators, nurses, social workers, sanitarians, nutritionists, psychologists and all other workers associated in any way with day nurseries. The first of these, "Daytime Care—A Partnership of Three Professions," reports the findings of a triprofession conference on day care held June 11-15, 1945 at Old Lyme, Conn. The second, "The Day Care of Little Children in a Big City," explains the work of the Day Care Unit which has been operating in the New York City Department of Health (Bureau of Child Hygiene) since 1943. These pamphlets, which should be read by all physicians connected with day nurseries, are procurable from the Child Welfare League of America, Inc., 130 East Twenty-Second Street, New York 10.

ORGANIZATION SECTION

Official Notes

RESOLUTION TO BE PRESENTED TO HOUSE OF DELEGATES

The following resolution has been submitted by Dr. A. S. Giordano, a member of the House of Delegates representing the Indiana State Medical Association:

Resolution on Intern and Resident Medical Training

WHEREAS, The primary objective of intern and resident medical training is medical education; and

WHEREAS, The acceptability of internships and residencies in hospitals should be founded on the excellence of their teaching programs; and

WHEREAS, The number of hospitals approved for intern and resident training exceeds the number of available interns and residents; and

WHEREAS, Such disparity has forced hospitals to compete for applicants for training on monetary rather than on educational opportunities; therefore be it

Resolved, That a reasonable and uniform maximum figure for the remuneration of interns and residents be established, so that the monetary value of internships and residencies may not act as a deciding factor in the applicants for such training.

Washington Letter

(From a Special Correspondent)

Nov. 25, 1946.

Newspaper Calls Delay in Modernizing Prosthetic Devices "Artificial Limb Disgrace"

In an editorial entitled "Artificial Limb Disgrace" the Washington *Daily News* and some twenty-one other Scripps-Howard newspapers have criticized the manufacturers of artificial limbs for alleged failure to incorporate reported modern improvements in the new prosthetic devices now being manufactured. "These improvements, according to Gen. G. B. Erskine, director of reemployment and retraining, have failed to materialize on the production line," the editorial states, continuing "His statement confirms many reports of bitter disappointment when amputees compared what was offered them with what the morale builders had promised. The manufacturers complain that skilled help is lacking. The principal trouble seems to be a lack of imagination and enterprise. Here is a problem involving the honor of the government and of the whole people, a problem where expense is no object."

Dr. Martha Eliot First Woman President of the American Public Health Association

Dr. Martha M. Eliot, associate chief of the Children's Bureau, will become the first woman president of the American Public Health Association in its seventy-five years of history, following her appointment as president-elect at the recent convention in Cleveland. She will take office at the 1947 session in Atlantic City next fall, the newly installed president being Dr. Harry S. Mustard, director of the DeLamar Institute of Public Health at Columbia University. Dr. Eliot was vice chairman of the United States delegation at the world health conference in New York. She is a Fellow of the American Medical Association, the American Academy of Pediatrics and the American Public Health Association. She is internationally known as a pioneer in the study and prevention of rickets.

National Drug Trade Conference Asks Tighter State Laws on Sleep Producing Drugs

The National Drug Trade Conference has asked for a tightening of state laws to prevent illegal use of sleep producing drugs such as the barbiturates, which are sedatives in action and frequently are prescribed by physicians to produce sleep or quiet nervous conditions. Dr. Austin Smith, director of the division of therapy and research of the American Medical Association, told the meeting of drug representatives, called to consider what controls should be requested, that the "potential harm" of such drugs is "habituation, suicide and possibly murder."

New Pox Disease Identified at National Institute of Health

Three scientists at the National Institute of Health are reported to have described and identified a new disease closely related to chickenpox and spotted fever, which has been named rickettsialpox. Considered the mildest of infections of its type, the disease was studied at or near a large housing development in New York by Drs. Robert J. Huebner and Charles Armstrong and Miss Peggy Stamps, bacteriologist.

Council on Medical Service

NORTH CENTRAL MEDICAL CONFERENCE

The annual meeting of the North Central Medical Conference this year was coordinated with the regional meeting of the Council on Medical Service. The meeting was held in St. Paul on Sunday, November 10. The conference president, Dr. J. D. McCarthy of Omaha, acted as chairman for the day.

Although it was but a one day meeting, many subjects and problems were presented and discussed. The speakers and subjects were:

"The American Medical Association as an Instrument to Advance the Ideals of American Medicine," Dr. J. D. McCarthy, Omaha.

"Public Relations of the American Medical Association," Thomas A. Hendricks, Secretary, Council on Medical Service, A. M. A.

"Medical Care in Rural Areas," Dr. L. W. Larson, Bismarck, N. D.

"National Legislation," Mr. J. W. Holloway Jr., Chicago, Director, Bureau of Legal Medicine and Legislation, A. M. A.

"The Council on Medical Service," Dr. E. J. McCormick, Toledo, Ohio, Chairman, Council on Medical Service.

"Prepayment Medical Care Plans," Dr. A. W. Adson, Rochester, Minn., member of the Council on Medical Service, A. M. A.

"United Mine Workers Health Fund," Dr. C. M. Peterson, Secretary, Council on Industrial Health, A. M. A.

"Medical Care for the Veteran," Dr. G. D. Williams, Veterans Administration, Washington, D. C.

"Hospital Survey and Construction Program," Dr. Herman E. Hilleboe, Assistant Chief, Bureau of State Services, U. S. P. H. S., Washington, D. C.

The following officers were elected to serve the North Central Conference for the coming year:

President, Dr. William Duncan, Webster, S. D.
President-Elect, Dr. A. W. Adson, Rochester, Minn.
Secretary-Treasurer, R. R. Rosell, St. Paul.

Coming Medical Meetings

American Medical Association House of Delegates Supplemental Session, Chicago, Dec. 9-11. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Conference of State Secretaries and Editors, Chicago, Dec. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Dermatology and Syphilology, Cleveland, Dec. 7-12. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American College of Surgeons, Cleveland, Dec. 16-20. Dr. Dallas B. Phemister, 40 E. Erie St., Chicago 11, Secretary.

American Society of Anesthesiologists, New York, Dec. 12. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Dec. 3-5. Dr. M. B. Stokes, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 13-15. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Radiological Society of North America, Chicago, Dec. 1-6. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southeastern Allergy Association, Atlanta, Ga., Jan. 18-19. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 49, S. C., Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 10-12. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, Memphis, Tenn., Dec. 5-7. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

SURGEON GENERAL ASKS YOUNG DOCTORS TO CONSIDER ARMY CAREERS

The War Department has authorized the commissioning of about 1,600 doctors in future integrations of Medical Corps officers. All doctors who received their medical education in the Army Specialized Training Program during the war have been given information regarding a career in the regular Army.

In letters sent November 15 to some 5,000 army doctors Major Gen. Norman T. Kirk, the Surgeon General, pointed out the professional advantages gained by practicing medicine in the peacetime regular Army. General Kirk said that the service offers thirty years of work in the field of medicine and its various specialties, which service will be devoted not only to active duty as doctors but to advance study in leading civilian medical schools when merited and in army general hospitals. An important point for doctors planning an army career is that younger men will be used entirely for professional assignments and training. Administrative positions are adequately provided from among the older officers. The army doctor begins to specialize in military medicine and surgery as soon as he enters the service. Complete and modern laboratories and medical equipment are available to him, and he is under the constant tutelage of experienced army doctors and prominent civilian medical scientists appointed as consultants to the Secretary of War through the Surgeon General. All applicants must be graduates of approved medical schools before they will receive consideration for commissions. The War Department has waived certain qualifications demanded of all army doctors, such as four years of medical studies and a year's internship in the case of ASTP trained doctors who received medical degrees under the accelerated program which required three years of medical study and nine months' internship. Approved internships, residency training and residency specialists training programs are in operation in army hospitals whereby a doctor trained in the abbreviated wartime program may enlarge on his education while receiving steady pay as an army doctor.

In considering the inducements offered by a career in the regular Army, General Kirk emphasized six principal points:

1. Professional assignments for those medical officers who desire them will be provided to the maximum extent possible.
2. Approved internships, mixed residencies and specialist residencies have been established in army hospitals.
3. Provision of specialist training in army hospitals and civilian institutions in order that regular army medical officers may qualify for the various American specialty boards.
4. Regular army medical officers will be encouraged to seek certification by the specialty boards.
5. Administrative training opportunities will be made available to those officers interested in administrative or tactical unit assignments.
6. Medical officers will be relieved to the maximum extent of tactical and administrative assignments for purely professional work.

The initial annual salary received by a first lieutenant is $3,804 if he has dependents and $3,372 if he has no dependents. The annual salary received increases with length of service and higher rank.

FOOD TASTERS AID IN RESEARCH ON FOODS

At the Quartermaster Food Institute for the Armed Forces, Chicago, under the guidance of a civilian committee, subsistence experts are endeavoring to find foods with satisfactory military requirements, utilizing carefully selected food tasters to help in the research. They have found that about 20 persons out of 100 have taste perceptions so accurate that they can tell the difference between canned bread that has been stored for two weeks at 70 F. and a similar item stored for the same length of time at 100 F. Some persons, the tests revealed, cannot distinguish the difference between a glass of clear water and one heavily saturated with quinine. A good taster, the experts say, will be right 12 or 13 out of 15 trials. The taste testing program is another step in research directed toward the goal of making foods more acceptable.

The Quartermaster scientists are endeavoring to learn which foods will retain their original characteristics longest and under high storage temperatures. They want to know which types of food are best, which types of container are preferable and whether foods maintain their stability better when vacuum packed or packed in inert gases. Highly qualified tasters are necessary for this work. Chemistry will indicate what changes have taken place in a food, but it will not reveal how these changes affect the human taste.

Another phase of food tasting conducted at the Quartermaster laboratories is testing items for preference. This problem involves the food preferences of all the men in the military service. To obtain percentages of preference, the scientists are employing large groups of testers not screened for their keenness of perception. Field ration items have been submitted to large messes at military installations and specialized items for sick or canvalescent personnel have been tested at army hospitals. The testing goes on continuously on fresh meats, vegetables and fruits, canned foods of all kinds and frozen foods.

RARE MANUSCRIPT AT ARMY MEDICAL LIBRARY

Probably the only manuscript extant of three medical works by the great Italian physician of the thirteenth century Taddeo Alderotti de Florentie is now on display in the Army Medical Library, Washington, D. C. This manuscript, written about 1375, is bound in three volumes, with rubrication in red and blue. Taddeo was the founder of the dialectical method in medicine. He was regarded as the most illustrious physician of all Italy, and it is possible that Dante, who immortalized him, attended his lectures at Bologna. Taddeo originated the form of medical literature called Consilia, a collection of clinical cases which had considerable vogue up to the end of the seventeenth century.

AVIATION MEDICAL EXAMINERS

Fifty-five officers of the Medical Corps graduated from the course for aviation medical examiners at the School of Aviation Medicine, Randolph Field, Texas, on October 19. The exercises included also musical selections by the 633d AAF band. The nine weeks course is designed to instruct AAF medical officers to be proficient in the special duties required of an aviation medical examiner, to familiarize them in the coordination of such duties with other professional and nonprofessional activities which they may be called on to perform and to indoctrinate them in flying training.

BRIGADIER GENERAL REINARTZ RETIRES

After twenty-nine years of military service, Brig. Gen. Eugen C. Reinartz, former commandant of the AAF School of Aviation Medicine, Randolph Field, Texas, will retire from active service with the Army. General Reinartz was assigned to the Aeronautics Division of the Aviation Section, Signal Corps, in 1919, and he has had continuous service with aeronautics since that date. He went to the North African and English theaters of war as aeromedical observer to study the problems confronting the flight surgeons in combat. In 1943 he received the John Jeffries Award for exceptional contributions to the advancement of aeronautics through medical research, given by the Institute of Aeronautical Sciences. He has had the longest continuous service of any medical officer assigned to the Army Air Forces, having known no other service in his entire army career.

Dr. and Mrs. Reinartz will make their home at 1518 Hearst Avenue, Berkeley 3, Calif. He contemplates entering private practice in neuropsychiatry in the San Francisco area.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Harold B. Hermann

The Bronze Star Medal was recently awarded to Lieut. Col. Harold B. Hermann, M. C., U. S. Army, Brooklyn, for meritorious achievement at Okinawa, Ryukyu Islands, from May 20 to Sept. 2, 1945 in connection with military operations against the enemy. In recounting his services the citation stated that, "as commanding officer of a station hospital, Lieutenant Colonel Hermann established a 400 bed hospital unit with maximum efficiency despite enemy air attacks and heavy rains which delayed the unloading of medical supplies and equipment. When the hospital was designated as the army evacuation center for Okinawa he performed this additional mission in such an outstanding manner that over 5,000 patients were processed and dispatched to rear areas without fatalities or serious mishaps. He demonstrated exceptional leadership and resourcefulness in maintaining high morale among both patients and staff and in making emergency improvisations to alleviate the overflow conditions which often existed. By his outstanding professional knowledge, administrative ability and devotion to duty, Lieutenant Colonel Hermann contributed substantially to the safe and efficient evacuation of sick and wounded army personnel from Okinawa and to the hospitalization program for that area." Dr. Hermann graduated from New York University College of Medicine, New York, and entered the service April 5, 1941.

MISCELLANEOUS

CAMPAIGN FOR FUND FOR NURSES MEMORIAL

The campaign to raise at least $2,500,000 for the Nurses National Memorial began throughout the country November 17. The memorial will be a tribute to the nurses who served in World War II and particularly to the 196 women of the Army Nurse Corps who lost their lives in the war. The campaign will continue until after New Years, and contributions will be sought from all citizens.

The memorial, to be erected in Washington, will be a home and center for upward of 100,000 women who will be eligible to use its facilities. The memorial will provide sleeping accommodations for at least 300 women, a lounge, library, assembly rooms, and dining and kitchen facilities.

Arthur H. Johnson, the national chairman, announced from the headquarters at 825 Woodward Building, Washington, D. C., that contributions will be sought from all citizens. In communities where chairmen have been established, these donations can be given to the local committee; otherwise they can be sent to National Headquarters in Washington. Thousands of hospitals, stores and other establishments will accept contributions by coin collectors or other means.

The memorial has been widely endorsed by leaders in all walks of life. One of the more recent additions to the list of sponsors is Cardinal Joseph Francis Spellman. At the recent meeting of Army chaplains in Washington, assembled for the sixteenth annual convention, the Chaplains Association of the Army and Navy unanimously endorsed the Nurses National Memorial campaign and urged all chaplains to lend their support to the project.

MEDICAL OFFICERS NEEDED FOR INDIAN SERVICE

The Department of the Interior announced on November 8 that medical officers were urgently needed for duty in the U. S. Indian Service. Preference will be given to former military personnel and federal employees. The entrance salary for recent graduates is $4,149.60 and for those who have had additional experience or special training $4,902 per annum.

Applicants must be graduates of an approved medical school and have successfully completed at least one year of internship in an approved hospital or its equivalent. Applicants must be American citizens and in good physical condition, but physical requirements are not as high as for the Army or Navy. When vacancies occur in the higher grade positions, promotions are made within the service whenever practicable. Government-furnished quarters are usually available at a cost of about $25 to $40 per month, and food costs are about the same as in any comparable rural area.

The Indian Service furnishes a unique complete medical service to Indian beneficiaries of all ages, mostly in rural areas within the United States and to the native population of Alaska. Appointments may be made to a hospital position or to a general practice on reservations. Most of the vacancies lie in the states west of the Mississippi River. Applicants may express a preference as to location. Appointments in Alaska have a 25 per cent differential in addition to base pay, and transportation of the appointee and his family and personal effects from place of actual residence to assignment in Alaska is paid by the government.

Interested physicians are urged to write to the Office of Indian Affairs, Merchandise Mart, Chicago 54, for further details and application forms.

PUBLIC HEALTH SERVICE

MEDICAL OFFICERS RELEASED FROM SERVICE

U. S. Public Health Service headquarters reports that the following medical officers have been terminated, inactivated, or retired, and directed to proceed to the city opposite their name:

Berman, Irving L., Senior Assistant Surgeon (R), Newton Center, Mass.
Callahan, Neil, Senior Assistant Surgeon (R), New Orleans.
Caplan, Sheldon M., Senior Assistant Surgeon (R), Chester, Pa.
Dillon, Milton, Assistant Surgeon (R), Jamaica, N. Y.
Di Pasca, Robert V., Senior Assistant Surgeon (R), Bronx, N. Y.
Dowdy, Kemp H., Senior Assistant Surgeon (R), Everett, Wash.
Eckberg, Edward M., Senior Assistant Surgeon (R), Galva, Ill. (inactivation).
Flick, Edward, Assistant Surgeon (R), Philadelphia.
Greer, Walter G., Senior Assistant Surgeon (R), Los Angeles.
Hruby, Allen J., Assistant Surgeon (R), Chicago.
Katz, David, Senior Assistant Surgeon (R), Clayton, Mo.
Ligon, Charles H., Assistant Surgeon (R), Brinklow, Md.
Lubitz, Joseph M., Surgeon (R), Milwaukee.
Marciano, Charles A., Surgeon (R), Brooklyn.
Miller, Arthur C., Senior Assistant Surgeon (R), Santa Rosa, Calif.
Olansky, Sidney, Senior Assistant Surgeon (R), Durham, N. C. (inactivation).
Rush, Willett H., Senior Assistant Surgeon (R), Versailles, Ky.
Rutecki, Vincent, Senior Assistant Surgeon (R), Buffalo.
Shack, Munroe E., Senior Assistant Surgeon (R), Somerset, N. J.
Taylor, Carl E., Assistant Surgeon (R), Cincinnati.
Treat, Michael R., Senior Assistant Surgeon (R), Philadelphia.
Van Camp, Wesley, Surgeon (R), Pueblo, Colo.
Waring, Clarence H., Medical Director, Pass Christian, Miss (retirement).
Williams, Ford S., Surgeon (R), New Orleans.
Woloshin, George, Assistant Surgeon (R), New York.
Woodard, Robert L., Senior Assistant Surgeon (R), Louisville.
Wright, Samuel, Senior Assistant Surgeon (R), Mauricetown, N. J.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Cleveland, Parish B.....Ensley
Dilworth, Edwin E.....Jasper
Dozier, Jack L.....Chance
Floyd, Cyril F.....Phenix City
Neely, William J.....Selma
Phillippi, Frank M. Jr.....Camden
Pye, Robert L.....Montgomery
Rouse, Ernest T. Jr.....Auburn
Thompson, William D.....Altoona

Arkansas

Boyle, Robert W.....Little Rock
Churchill, Calvin A.....Batesville
Nicholson, James L.....Fort Smith
Ross, Wallis A.....Arkadelphia
Sadler, Deane L.....Little Rock
Scarborough, William R.....Clarkesvile
Wilkes, Elbert H.....Little Rock
Woodcock, William A. Jr...Hot Springs
Wright, Jack.....Hot Springs

Arizona

Mayne, Richard H.....Miami
Snapp, Robert H.....Tucson

California

Ariaudo, John A.....Burbank
Borden, Craig W.....Marysville
Bothereau, Narcisse R.....S. Pasadena
Bryan, Eugene K.....Oakland
Dieterich, John P.....Glendale
Chambers, Ewan B.....Santa Monica
Chock, Chong A.....Los Angeles
Colby, Eric F.....Bakersfield
Commons, Robert R.....Los Angeles
Dingacci, Alphonse J.....Santa Clara
Dodge, Douglas R.....Pasadena
Dowrie, James O.....Chico
Finch, Raymond B.....Covina
Gordon, Morris R.....San Francisco
Gosslee, John M.....Orange
Hallock, Glenn C.....Los Angeles
Hargus, Harry B.....Belmont
Hayman, Max.....Compton
Jampolsky, Arthur J.....Long Beach
Johnson, Howard B.....Glendale
Kalick, Peter.....Los Angeles
Karnofsky, David A.....Los Angeles
Kelley, James L. Jr.....San Diego
Kurlander, Leroy F.....Palm Springs
Lane, Alfred L.....Los Angeles
Lee, Frank W.....Sacramento
Leff, Walter.....San Francisco
Lester, Milton L.....San Francisco
Lyon, Harvey B. Jr.....Lafayette
Masson, John McM.....Los Angeles
Mense, Jackson S.....Long Beach
Meyer, Robert W.....Palo Alto
Mulford, Winthrop F.....Montrose
Myers, William E.....San Fernando
Nickels, Thomas T.....San Francisco
Oier, George W.....Berkeley
Peckham, George M.....Oakland
Porter, George W.....Modesto
Quillinan, Robert H.....San Francisco
Read, John M.....San Francisco
Redding, Marion D.....San Diego
Redner, Leo R. Jr.....Sunset Beach
Ricker, John H.....Berkeley
Robinson, Francis L.....San Francisco
Rubin, Henry J.....Los Angeles
Russell, Richard S.....Oakland
Sanborn, Alvin L.....Los Angeles
Scandalis, Paul R.....Los Altos
Schmidt, Clarence C.....Loma Linda
Schneider, Irvin J.....Sacramento
Schomaker, Theodore P....San Francisco

California—Continued

Sears, William N.....San Francisco
Shaffrath, Max D.....Berkeley
Shery, Kurt T.....Los Angeles
Singhoff, Arno W.....Oakland
Skorin, John J.....San Pedro
Smith, Edmund L.....San Francisco
Spaulding, Clarence A. Jr..San Francisco
Stanton, William W.....Long Beach
Stout, Joseph H. Jr.....Los Angeles
Thomas, Henry S.....Santa Cruz
Turner, James L.....Stockton
Van Horn, Philip R.....San Francisco
Wallace, Charles J. Jr.....Sacramento
Wallen, Ernest R.....San Francisco
Wasserman, David M.....Los Angeles
Weaver, Ralph M.....Long Beach
Weil, Hans J.....Altadena
Weiner, Herman.....Los Angeles
White, Jess F. Jr.....Hollywood
Wilson, John A.....Los Angeles
Winn, Paul F.....Walnut Creek
Witherbee, Orville O.....Los Angeles
Yeakel, Earl L. Jr.....Orange
Yee, George.....San Francisco

Colorado

Keller, Park D.....Pueblo
Larimer, Craig W.....Salida
Likes, Edwin C.....Lamar
Murray, Thomas A.....Denver
Parkinson, Edward C.....Denver
Prouty, Lawrence R.....Denver
Robinson, Lloyd W.....Denver
Rosenfeld, Eugene D.....Denver

Connecticut

Blake, William D.....New Haven
Brown, Lloyd.....New Haven
Cheney, Roger H.....Manchester
Flaherty, Morgan V.....W. Hartford
Foster, Hollis J. Jr.....New Britain
Johnson, Maurice E. K.....W. Hartford
Katzin, Benjamin.....Winsted
Roth, Oscar.....New Haven
Schwartz, Raymond L....West Stamford
Sigel, Harry.....New Haven
Swirsky, Morgan Y.....New Haven
Thompson, Anthony J.....Hartford
Troy, William D.....Stamford
Uvitsky, Irving H.....Bridgeport
Weigel, Stanley J.....Danielson
Wessel, Morris A.....New London
Wright, Walter E.....Manchester

Delaware

Bartoshesky, Stephen W.....Wilmington
Chrzanowski, John A.....Wilmington
Livingston, William T.....Wilmington
Maguire, Vincent D.....Wilmington
Tosick, William A.....Wilmington

District of Columbia

Armstrong, Robert H. Jr.....Washington
Cobey, Milton C.....Washington
Dove, Samuel.....Washington
Edwards, John A.....Washington
Ernst, Henry E.....Washington
Fegan, John B.....Washington
Haile, Robert C.....Washington
Hanby, John E.....Washington
Kenneth, Thos. J. Jr. .....Washington
MacMurray, Frank G.....Washington
Madigan, Emmett P.....Washington
Martyn, Herbert E. Jr.....Washington
Mengarini, Ariel A.....Washington
Parks, Joseph A. Jr.....Washington

District of Columbia—Continued

Pistolas, Nicholas G.....Washington
Rowen, Bernard R.....Washington
Smith, Gordon M.....Washington
Suraci, Alfred J.....Washington
Young, Joseph R.....Washington

Florida

Armour, Thomas Jr.....Miami
Berry, John L.....Miami
Caudle, Richard S.....Lakeland
Chenoweth, Arthur I.....Daytona Beach
Coret, Irving A.....Miami
Cumming, Richard C.....Ocala
Ginsberg, Harold S.....Daytona Beach
Graham, Emil J.....Homestead
Medlin, John H.....Miami
Rodgers, Richard C.....Tampa
Ruskin, Joseph J.....Tampa
Scott, Joseph W.....Live Oak
Sweeley, William J.....Jacksonville
Wagenheim, Harry H.....Pensacola
Wells, James R.....Daytona Beach
West, John R. III.....St. Petersburg
Wood, Arthur W. Jr.....Miami

Georgia

Arnold, Maurice F. Jr.....Macon
Ashford, John W.....Athens
Benson, William H. Jr.....Marietta
Brown, Hilton J.....Douglasville
McCain, John R.....Decatur
McKnight, Robert R. Jr.....Toccoa
Miller, Edward S.....Atlanta
Mixson, Edward H.....Augusta
Mullins, Dewitt F. Jr.....Rutledge
Perry, Ernest A.....Bethlehem
Pittman, Carl S. Jr.....Tifton
Price, Harry J.....Emory Univ.
Rankin, Joseph L. Jr.....Atlanta
Reynolds, Horace M.....Cairo
Roddenbery, Seaborn A.....Savannah
Rogers, Thomas E. Jr.....Macon
Rubin, Saul.....Savannah
Shafferman, Samuel L.....Atlanta
Smith, Cason C.....Augusta
Smith, Melvin E.....Grantville
Steadman, Henry E.....Augusta
Sutker, Harold.....Savannah
Traylor, James B.....Augusta
Waring, Antonio J. Jr.....Savannah
Weinstein, Alfred A.....Atlanta
Wilson, Clyde A. Jr.....Cordele
Wisdom, Wilbur D.....Chipley
Woodall, William P.....Thomaston

Idaho

Cutler, Royal S.....Preston
Murphy, Robert C.....Rupert

Illinois

Barsky, Sidney.....Maywood
Beal, Robert L.....Chicago
Beamer, Parker R.....Urbana
Beinke, Victor H.....Chicago
Bernardi, Hugh.....Highwood
Burke, Jerome L.....Argo
Chaplik, Seymour.....Chicago
Chapman, Bernard M.....Chicago
Cope, Beverly A.....Chicago
Cress, Charles H. Jr.....Lombard
Curran, Edwin F.....Decatur
Dehn, Helmut M.....Chicago
Diffenbaugh, Willis G.....Chicago
Doerscheln, Wilbur J.....Chicago
Douglas, Ralph W.....Chicago
Fine, Herbert V.....Chicago

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

Furman, Jerome M.....Chicago
Gerber, Aaron B.....Chicago
Gorecki, Ferdinand.....Chicago
Govostis, Michael C.....Chicago
Guyton, Willard A.....E. St. Louis
Henderson, Justus D.....Delavan
Horwitz, Mandel.....Chicago
Johnson, Lent C. Jr.....Chicago
Isoe, Isadore M.....Chicago
Jubelt, Hilbert P.....Chicago
Juergens, Albert L.....Chester
Kasik, Otto.....Chicago
Kernis, L.....Chicago
Kenny, James N.....Peoria
Klokke, Karl.....Chicago
Kopriva, James W.....Chicago
Kordecki, Frank A.....Chicago
Kowalski, Leonard F.....Evergreen Park
Kugel, Julius D.....Chicago
Lack, Herbert.....Chicago
Lamb, Leonard.....Cerro Gordo
Larzelere, Henry B.....Waukegan
Lehmann, Werner.....Canton
Lloyd, Donald W.....Murphysboro
McMahan, John H.....Vienna
Madi, Risley J.....Chicago
Markin, Leo.....Chicago
Meisenheimer, Martin P. III...Oak Park
Mizenberg, Edward.....Chicago
Morgan, Edward H.....Oak Park
Moss, Kenneth J.....Decatur
Nalefski, Lester A.....Chicago
Narut, Leo F.....Chicago
Nissen, Edward.....Chicago
Noble, Gene M.....Chicago
O'Neill, Coleman J.....Oak Park
Palka, Leonard J.....Cicero
Pelatowski, William J.....Chicago
Pertzovsky, Louis.....Chicago
Peters, Clifford H.....Chicago
Peterson, Everett R. T.....Rockford
Phalen, George S.....Peoria
Philipsborn, Herbert F. Jr.....Chicago
Plattner, Edward B.....Chicago
Pleiss, Philip H.....Chicago
Polley, Theodore Z.....Joliet
Reiss, George I.....Chicago
Riley, James W.....Eureka
Rosenthal, Maurice J.....Chicago
Rubin, Louis.....Rock Falls
Ruggie, Alexander.....Chicago
Ruzich, Stanley E.....Chicago
Salk, Melvin R.....Chicago
Sansone, Vincent C.....Springfield
Shipley, James E.....Wilmington
Siegel, Irving.....Chicago
Silber, Max N.....Chicago
Simmons, Marvin W.....Chicago
Smith, Robert H.....Evanston
Smith, Warren F.....Chicago
Snitman, Harry.....Chicago
Sokoloff, Mitchell.....Chicago
Sparer, Phineas J.....Danville
Sroka, Alexander G.....Calumet City
Stanmar, Stanley U.....La Salle
Starck, Carl D.....Palatine
Steinert, Lars E. T.....Chicago
Stormont, Marion F.....Chicago
Strick, Marvin H.....Chicago
Thompson, Robert G.....Maywood
Urbanek, Frank E.....Riverside
Victor, Alexander.....Chicago
Vondrasek, Earl A.....Chicago
Ward, Louis E.....Mount Vernon
Webster, Frederick S.....Chicago
Weinberg, Jack.....Chicago
Weston, Raymond E.....Chicago
Whalen, Joseph F.....Evanston
Wier, Vernon S.....Montgomery
Wiggins, Ira W.....Kankakee
Zeknan, Theodore N.....Chicago
Zielinski, Victor J.....Chicago
Zummo, Bruce P.....Chicago

Indiana

Annan, Cornelius M.....Huntington
Baumann, Charles H.....Belleville
Boyd, Nelson E.....Freelandville
Bridge, Ezra V.....Westville
Cornell, Robert A.....Crawfordsville
Gohmann, Joseph T.....New Albany
Jones, Leslie M.....Mishawaka
Lohman, Robert M.....Ft. Wayne
Nutter, Wyndham H.....Rushville
Ravdin, Emile M.....Evansville
Reynolds, Fred C.....Indianapolis
Rhorer, William G.....Marion
Ridgway, Alton H.....Upland
Rissler, Ross W.....Indianapolis
Ruddell, Keith R.....Indianapolis
Rudicel, Max W.....Huntington
Sage, Charles V. Jr.....Indianapolis
Skahen, James K.....Elkhart
Thompson, Paul D.....Indianapolis
Van Meter, Cyril P.....Indianapolis
Wales, Homer L.....Indianapolis
Weitzel, Roland E.....Francisco
Wigent, Ralph D.....Indianapolis
Woolling, Kenneth R.....Indianapolis

Iowa

Blumenschein, John C.....Ames
Boyer, Ulysses S.....Davenport
Coddington, James H.....Humboldt
Ely, Lawrence O.....Guthrie Center
Griffith, Wylie H.....Adair
Knott, Peirce D.....Sioux City
Kroack, Kalman J.....New Albin
Laubscher, John H.....Iowa City
Leik, Donald W.....Dubuque
Mansheim, Bernard J.....Ft. Madison
Martin, Frank F.....Eagle Grove
Perkins, Rollin M.....Iowa City
Posner, Edward R.....Des Moines
Ristine, Leonard P.....Mt. Pleasant
Sauer, Harold E.....Marshalltown
Schutter, John M.....West Bend
Smith, Delbert L.....Iowa City
Sweeney, Lloyd J.....Sioux City
White, Warren G. Jr.....Nevada
Wormhoudt, Herbert L.....Pella

Kansas

Buck, Ben H.....Wichita
Christian, Stanley J.....Kansas City
Collins, Francis T.....Concordia
Edwards, Francis L.....Wichita
Gough, James D.....Chanute
Grigsby, Kenneth R.....Medicine Lodge
Hoffer, John G. Jr.....Kansas City
Payton, Calvin W.....Arkansas City
Peterson, Birger E.....Assaria
Priddle, Harold D.....Wichita
Proctor, Lawrence A.....Parsons
Rasmussen, William C.....Kansas City
Schroeder, Sydney O.....Kansas City
Scimeca, Michael W.....Coffeyville
Smelser, Joseph E.....Topeka
Smiley, William A. Jr.....Junction City
Thierstein, Samuel T.....Whitewater
Williams, Charles L.....Wichita
Young, Fred C.....Kansas City

Kentucky

Adams, William R.....Lexington
Brewer, Carlos B.....Hopkinsville
Creekmore, Maurice A.....Pine Knot
Crudden, Charles H.....Richmond
Fowler, Merle W. Jr.....Irvine
Francis, Charles McG.....Bowling Green
Jackson, Richard G.....Danville
Jones, Edmund P.....Paducah
Keeling, William H.....Willisburg
Lawrence, William E.....Tompkinsville
Lecky, Jim H.....Calvert City
Pfahler, Charles V.....Latonia

Kentucky—Continued

Rose, Edgar K.....Landsaw
Sanders, Richard D.....Louisville
Shiflett, Emory L.....Louisville
Stephens, Wilson P.....Jenkins
Stevens, Elliott P.....Horton
Swain, Francis M.....Louisville
Vernon, Frank A.....Pikeville
Weems, Mallory P.....Louisville

Louisiana

Baranco, Donald J.....Lafayette
Buechner, Howard A.....New Orleans
Cohn, Samuel K.....New Orleans
De Lee, Stuart.....Shreveport
Edelman, Joseph M.....Baton Rouge
Gibson, John W.....Peneville
Johnston, William J.....Rayne
La Haye, Philip W.....Mamou
Morrogh, Earl H.....Pineville
Pasquier, Claude M. Jr.....Shreveport
Rowe, Daniel H.....New Orleans
Sutton, Paul.....New Orleans
Trufant, Samuel A. III.....New Orleans
Tucker, Edwin W.....New Orleans

Maine

Lawrence, Homer E.....Bethel
Ouellette, Philippe W.....Lewiston
Schmidt, Lorrimer M.....Bethel
Schoch, Henry K. Jr.....Fryeburg

Maryland

Blumenthal, Stanley L.....Baltimore
Brumback, Joseph E. Jr.....Baltimore
Cohen, Frank S.....Baltimore
Doherty, Daniel L. Jr.....Baltimore
Klijanowicz, Stanley B.....Baltimore
Kueffner, William R.....Rockville
Loker, Frank F.....Baltimore
Mussenden, Glenford P.....Baltimore
Phifer, Theodore D.....Baltimore
Reid, Josiah J. R.....Hagerstown
Richardson, Edward H. Jr.....Baltimore
Sachs, James W.....Hancock
Sauber, Irving.....Baltimore
Scarborough, Clarence P.....Towson
Sims, William S.....Frederick
Staton, Hilliard V.....Myersville
Stewart, Harold L.....Bethesda
Stimson, Allan B.....Chevy Chase
Suarez-Murias, Edward L.....Baltimore
Wachsman, Irvin L.....Baltimore
Webster, Thomas C.....Baltimore
Weeks, William E.....Baltimore
Wice, Louis E.....Baltimore
Williams, Charles H.....Owings Mills
Wolfe, William D.....Baltimore

Massachusetts

Buckley, Joseph F.....New Bedford
Burns, Herbert V.....Gloucester
Campbell, Elmore M.....Dorchester
Caradonna, Matteo.....Everett
Cohen, Milton.....Brookline
Covell, Lester L.....Woburn
Dalton, John T.....Braintree
Dexter, Chester J.....Belmont
Dine, Robert F.....Brookline
Du Toit, Charles H.....Boston
Gordon, George S.....Lynn
Greer, William E. R.....Boston
Hallowell, Phillips.....Milton
Hatt, Rafe N.....Longmeadow
Hurley, Frank E.....Springfield
Kohn, Francis J.....Salem
Kranichuck, John M.....So. Hadley Falls
Leary, Howard L.....Jamaica Plain
Lepore, Anthony E.....N. Abington
Lyons, Melvin K.....Dorchester
Maroney, John A.....Worcester
Matloff, Jacob.....Chelsea

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts—Continued

Melucci, Edmond R.....Lawrence
Militzer, Raymond E.....Woburn
Milkey, Gustave P.....Montague City
Mittelman, Eugene.....Boston
Myerson, David J.....Brookline
Nulsen, Frank E.....Boston
O'Brien, Paul A.....Revere
O'Connell, William T.....Roslindale
Olive, George M. Jr.....Belmont
Peacher, William G.....Boston
Pepe, Enrico A.....E. Boston
Regan, John E.....Roslindale
Robertson, Charles W.....Boston
Robinson, Roger W.....Grafton
Rubin, Julius.....Canton
Rudman, Benjamin W.....Boston
Ryder, Brooks.....N. Attleboro
Sarkisian, Sarkis A.....Bridgewater
Schwartz, Herman.....Boston
Scola, James V.....Springfield
Shagoury, Charles J.....Brighton
Shand, Nathaniel K.....Fall River
Sherman, Allen I.....West Newton
Simon, Naif L.....Quincy
Spindler, James F.....Brighton
Stark, Richard B.....Boston
Stone, Chauncey M. Jr.....Boston
Thomas, Warren D.....Turners Falls
Tolnick, Bernard.....Roxbury
Trapuzzano, John.....Billerica Center
Tucker, Charles A.....Boston
Walker, Robert T.....Newton Centre
Wang, Richard P.....Boston
Weiner, Albert E.....Chestnut Hill
Wexler, Jack.....Mattapan
Whitham, Elmer L.....New Bedford
Wiedeman, George H.....Leominster
Wilson, Norman L.....Boston
Wolston, Edward C.....Springfield
Yood, Bernard.....Roslindale
Zaff, Fred.....Chelsea
Zovickian, Anthony.....Watertown

Michigan

Bannow, Robert J.....Mt. Clemens
Barris, Ralph W.....Grand Rapids
Beukema, Marenus J.....Grand Rapids
Boyce, George H.....Iron Mountain
Brown, Nathan.....Detroit
Bunce, Leo W.....Trufant
Claver, Randall W.....Zeeland
DeMay, John D.....Jackson
Gordon, Benjamin F.....Newaygo
Grant, Abraham H.....Detroit
Hartkop, Henry H.....Detroit
Iacobell, Peter H.....Detroit
Kambly, Arnold H. Jr.....Ann Arbor
Leipsitz, Louis S.....Detroit
Matthews, John I.....Detroit
Nunemaker, John C.....Ann Arbor
Okamura, Ichiro D.....Detroit
Olesky, Stanley P.....Jackson
Patterson, Adonis.....Battle Creek
Randall, David S.....Albion
Rufus, Howard C.....Ann Arbor
Scheibe, John R.....Grand Rapids
Sears, Charles H.....Beulah
Shaffer, Joseph H.....Detroit
Shulman, Herschel A.....Detroit
Simpson, Gordon E.....Detroit
Taylor, Aaron.....Detroit
Ting, Sik Woo.....Detroit
Vandermeer, Ray.....Grand Rapids
Walton, Clarence H.....Detroit

Minnesota

Aldes, John H.....St. Paul
Arzt, Philip K.....St. Paul
Brown, Schuyler P.....Minneapolis
Burklund, Edwin C.....Minneapolis
Burseth, Edgar C.....St. Paul

Minnesota—Continued

Erdal, Ove A.....Bricelyn
Eustermann, John J.....Lewiston
Gordon, Jack.....Minneapolis
Gorsuch, Melvin T.....Rochester
Kirklin, John W.....Rochester
McKibbin, John P.....Rochester
McLaughlin, Byron H.....Minneapolis
Orr, Burton A.....Faribault
Papermaster, Ralph.....Minneapolis
Pearson, Donald J.....Rochester
Pelant, Kenneth F.....Owatonna
Peterson, Kenneth A.....St. Paul
Rudolph, Frank A.....Red Wing
Sanford, Raymond A.....Rochester
Schmid, John F.....Worthington
Schoeneberger, Paul B.....Perham
Thorough, Paul H.....Luverne
Uihlein, Alfred.....Rochester
Zachman, Leo L.....St. Paul

Mississippi

Abraham, Leo M.....Port Gibson
Bethea, Ralph C.....Jackson
Friday, Walter C. Jr.....Starkville
Latham, Marvin W. Jr.....Macon
McLean, David W.....Meridian
Mills, Miriam.....Brookhaven
O'Neal, Kelly R.....Saucier
Sproles, James A. Jr.....Columbia
Tabb, Harold G.....Greenwood
Warner, William C.....Grenada

Missouri

Bradford, Arville W.....St. Joseph
Cain, Ivan W.....Kansas City
Daman, George A.....St. Louis
Delaney, Joseph H.....Columbia
Dixon, John B.....Kansas City
Dunagin, James L.....Decatur
Graham, John G. Jr.....University City
Haddock, James N.....Cape Girardeau
Hoeper, Samuel D.....Rich Hill
Jones, Richard A.....St. Louis
King, Eustace E. III.....Overland
Lewis, James E. Jr.....Mountain Grove
McCormick, James E.....Kansas City
Park, William I. Jr.....St. Louis
Petry, James L.....St. Louis
Ridings, Harold D.....Kennett
Robertson, Frank G.....St. Louis
Russi, Simon.....St. Louis
Sawyer, John B.....St. Louis
Tichenor, Robert W.....Sappington
Wallace, Edgar S.....Old Mines
Wiege, Eugene.....Richmond Heights
Woods, Walton C.....Kansas City
Wooldridge, Wilfred E.....Springfield
Yore, Richard W.....Brentwood

Montana

Brann, Joe E.....Great Falls
Harpole, Gerald T.....Deer Lodge
Layne, John A.....North Great Falls
Soltero, Harry R.....Lewistown
Steinberg, Samuel S.....Butte

Nebraska

French, Ivan M.....O'Neill
Gilbert, Louis W.....Beatrice
Gray, William.....Omaha
Hebert, Frederick M.....Omaha
Lindell, Nels H.....Omaha
Mutz, Austin E.....Lincoln
Otto, Claude W.....Aurora
Rudersdorf, Howard E.....Omaha
Rush, Weaver A.....Beatrice
Sjoding, Jennings D. M.....Omaha
Smalldon, Ted R.....Omaha
Smiley, Richard H.....Lincoln
Smith, Edward J.....Omaha

Nebraska—Continued

Smith, Richard D.....Omaha
Synovec, Emil.....Pierce
Westover, Joseph L. Jr.....Valentine
Wurtz, Reginald M.....Hartington

Nevada

Jensen, Peter S.....Reno
Pasutti, William E.....Sparks

New Hampshire

Macek, John F.....Manchester
Perron, Frank E. Jr.....Manchester
Stevens, Clark W.....North Stratford

New Jersey

Banks, Albert L.....Somerville
Blake, Albert J.....Paterson
Blanchard, William H.....Ocean Grove
Butz, Robert A.....Maplewood
Colavitz, James J.....Trenton
Fassino, Anthony J.....Irvington
Grant, Charles P.....Bloomfield
Headrick, Elmer O. Jr.....Haddonfield
Helden, Gerard O.....S. Orange
Hoffman, John B.....Rahway
Hunter, Robert.....Delanco
Iannone, Angelo B.....Orange
Imhoff, Robert E.....Hammonton
Irmisch, George W.....Columbus
Kuhn, William G.....Highland Park
Lemkin, Sam.....Newark
Mc Afoos, Louis G. Jr.....Merchantville
Mark, Donald D.....Jersey City
Novak, Edward J.....Sewaren
Parell, George C.....Newark
Perlman, Maximilian.....Newark
Pinck, Bernard D.....Passaic
Plum, Stephen H. M.....Morristown
Ram, Nathan H.....Caldwell
Reed, Franklin L. Jr.....Westfield
Riordan, John P.....S. Orange
Robinson, Jay A.....Trenton
Rosenblatt, Max B.....Elizabeth
Rossman, Isadore.....Newark
Rubens, Otto.....Dover
Schaff, Royal S.....Newark
Schimel, John L.....Jersey City
Schirmer, William J.....Hillside
Schneckendorf, Samuel J.....Jersey City
Sciorsci, Mario E.....Hoboken
Scovern, Louis.....Passaic
Shapiro, Samuel A.....Newark
Sinderbrand, Robert E.....Atlantic City
Smith, Louis S.....Newark
Stone, William.....Passaic
Strauss, Frederick.....Newark
Vesce, John J.....Ridgewood
Wagener, William L. Jr.....Atlantic City
Watson, Walter B.....Belleville
Winokur, Gerald L.....Jersey City
Wolfram, Julius.....Somerville
Zheutlin, Harold E. C.....Jersey City

New Mexico

English, Frank A.....Carrizozo
Greeley, Robert H.....Deming
Lamon, John D. Jr.....Albuquerque

New York

Abbene, Michael M.....Brooklyn
Alfano, Paul A.....Buffalo
Anziano, Samuel J.....Garden City
Audioun, Legrand J.....Rockville Center
Bachrach, Louis.....Brooklyn
Bauer, Irving L.....Brooklyn
Beal, John M.....New York
Beaty, John T.....New York
Beauregard, John F.....Brooklyn
Benivegna, Salvatore L.....Brooklyn

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Berne, Robert M.....New York
Bevilacqua, Rocco P.....Woodhaven
Biel, Paul.....Babylon
Blaine, Graham B. Jr.....New York
Block, Nathan.....New York
Bloom, Marvin L.....Buffalo
Blum, Gilbert.....Brooklyn
Blum, Robert.....Buffalo
Boldt, Martin H.....New York
Brandetsas, Peter G.....Palmyra
Brandt, Jay L.....Brooklyn
Brown, Seymour M.....Brooklyn
Brundage, Franklin....Huntington Sta.
Buell, William O.....New York
Campanella, Santo D.....Astoria
Champlin, Frederic B.....White Plains
Chidsey, Andrew D. III.....Syracuse
Codik, Nicholas R.....New York
Cohen, Irvin J.....Brooklyn
Colangelo, William V...Long Island City
Coon, Donald F.....Syracuse
Decker, David G.....Pittsford
Del Giorno, Thomas E.....Floral Park
Del Junco, Gerard W.....Rochester
Derman, Herbert.....Brooklyn
Dirienzo, Vincent L.....Elmhurst
DiTraglia, Frank J.....Bronx
Dunn, William H.....New York
Dworetzky, Murray.....New York
Eagle, Henry R.....New York
Ernst, Alfred R.....Jamaica
Escher, George C.....New York
Fletcher, Archibald G. Jr.....New York
Friedland, Elmer.....Buffalo
Friedman, David.....Brooklyn
Friedman, Murray M.....New York
Fulkerson, Lynn L. Jr.....New York
Galitz, Eli.....Brooklyn
George, William B.....Verona
Ginzler, Arthur M.....New York
Giorlando, Stephen W.....Brooklyn
Glenn, Abraham G.....Bronx
Goldensohn, Leon N.....New York
Gordon, Irving.....Flushing
Gordon, Kenneth Jr.....Rensselaer
Gorlin, David O.....Ozone Park
Groopman, John.....Mineola
Gross, Jerome.....New York
Haber, Norman.....Buffalo
Hadley, Carmer.....Glens Falls
Haft, Abraham S.....New York
Halpern, Mordecai.....New York
Handler, Joel S.....Long Island
Harmon, Jules.....Brooklyn
Harrison, Irving B.....Utica
Heineman, Thomas H.....Hamburg
Hertz, Simon.....New York
Heymann, Hans.....Forest Hills
Hollander, Bernard.....New York
Horwitz, William H.....Rochester
Hunt, Charles C.....Bronx
Igel, Leo.....Brooklyn
Inwood, Louis R.....Brooklyn
Irwin, Robert J. A.....Buffalo
Ives, Charles K.....Roxbury
Jackson, Irving.....New Rochelle
Jacobs, Ralph.....New York
Jeannopoulos, Achilles L.....New York
Jervis, George A.....Thiells
Johnstone, William C.....Lynbrook
Joseph, Solomon.....Bronx
Kalman, Manuel.....Bronx
Kammer, John W.....Rochester
Kantrowitz, Felix A.....New York
Karpas, Jules L.....Brooklyn
Katz, Henry E.....New York
Keenan, William S.....Buffalo
Keniston, Allen H.....Port Jervis
Kent, Edwin H.....New York
Kertzner, Leonard.....Brooklyn
Keschner, Harold W.....New York

New York—Continued

Kirkwood, George M.....Syracuse
Kirschenfeld, Jack.....Brooklyn
Klein, Emil F.....New York
Klein, Milton.....Far Rockaway
Kleinman, Abraham M.....Brooklyn
Klements, Joseph.....Forest Hills
Krischer, Meyer I.....Brooklyn
Kuntz, Julius A.....Thiells
Kuschner, Marvin.....Brooklyn
Ladue, William L.....Plattsburgh
Lambert, Bruno B.....Corona
Lamberti, Thomas G.....Arcade
Lee, Stanley L.....Far Rockaway
Leeds, Hans W.....Binghampton
Leff, Irving L.....Brooklyn
Lehmann, Walter X.....New York
Leibowitz, Sidney.....New York
Leshin, Seymour.....New York
Levitt, Harry.....Watertown
Levy, Jack H.....New York
Lewin, Michael.....New York
Lippold, William E.....Brooklyn
Littlejohn, Robert E.....New York
Livingston, Sidney R.....New York
Longo, Vincent F.....Cedarhurst
Lord, Benjamin J. Jr.....New York
Lusardi, Eugene J.....Brooklyn
McLaughlin, Edward F.....Lynbrook
MacLeod, Duncan K.....Buffalo
MacMillan, Ralph M.....Brooklyn
McNulty, Roland J.....Staten Island
Macomber, Walter B.....Albany
Maggio, Edward V.....Brooklyn
Martin, William F.....Glen Cove
Mayka, Stephen.....Rochester
Meer, Nadhim E.....Forest Hills
Mellicker, Martin C.....New York
Mendonsa, Lawrence E.....New York
Meyers, Paul T.....Forest Hills
Milberg, Irving L.....New York
Miller, George R.....Rochester
Modlin, Hyman J.....Brooklyn
Musacchio, Frank.....Brooklyn
Myers, James M.....Valatie
Neimand, Karl M.....Flushing
Ninfo, John C.....Rochester
Norris, John L.....Dongan Hills
O'Neill, Earl A.....New York
O'Rourke, James J.....New York
Ostrowski, Joseph P.....Utica
Owen, William F. Jr.....Schenectady
Packer, Max I.....New York
Palmer, Harris H.....White Plains
Panio, Joseph.....Bronx
Paradis, Harold D.....New York
Pearce, James F.....Alexandria Bay
Peelor, Robert A.....Poughkeepsie
Perman, Abraham H.....New York
Piliero, Pasquali P.....New York
Pleskow, Adrian J.....Buffalo
Plimpton, Calvin H.....New York
Prince, Ralph W.....Rochester
Quimby, James E.....Albany
Rabinowitz, Alex.....Bronx
Rabkin, Boris.....Brooklyn
Raicus, Eugene.....Jamaica
Rabinowitz, Yale.....Brooklyn
Ralyea, John R.....Kenmore
Randolph, Stephen H.....Rome
Ray, John H. III.....Dongan Hills
Raynolds, Arthur H.....New York
Reel, John J.....Rensselaer
Reilly, Edward T.....Brooklyn
Richards, William R.....New York
Richman, Daniel P.....New York
Ripley, George S. Jr.....Mt. Vernon
Roberts, Dudley A.....New York
Roberts, Warren C.....Rockville Center
Rosenhaus, Harold.....Brooklyn
Rosenthal, Ira M.....Brooklyn
Rothstein, Sidney N.....New York

New York—Continued

Rottkov, Abraham.....Brooklyn
Ruggiero, Anthony J.....New York
Ruggio, Joseph D.....New York
Russo, Daniel E.....Flushing
Russo, John R.....New York
Rutherford, Morrison.....New York
Sahn, Stanley H.....Brooklyn
Saliani, Nicholas.....New York
Sanders, Norbert.....New York
Scalzo, John J.....Brooklyn
Scarano, Christopher A.....Bronx
Schiess, William A.....Solvay
Schlamowitz, Samuel T.....Brooklyn
Schmookler, Albert.....Brooklyn
Schneider, Kurt W.....New York
Schneller, Leo.....Jamaico
Schottenfeld, Aaron.....Bronx
Schulan, Irving.....Syracuse
Schultz, Martin.....Brooklyn
Schuyler, Samuel A.....New York
Schwartz, Jerome.....Bronx
Schwartz, Ralph M.....Brooklyn
Schwartz, Sandor A.....Flushing
Schwinger, Robert.....New York
Scidenberg, Robert.....Syracuse
Scides, Jerome M.....Brooklyn
Seligmann, Erich.....Whitehall
Selverstone, Bertram.....New York
Seneca, Harry T. A.....New York
Shaw, Wallace M.....Yonkers
Sheckman, Edward....Forest Hills, L. I.
Shedrovitz, Belle C.....New York
Shey, Herbert H.....Far Rockaway
Siegel, Henry.....Astoria, L. I.
Siegel, Marvin S.....Brooklyn
Simms, Leon M.....Brooklyn
Sirota, Harvey H.....Brooklyn
Smith, Willard L.....White Plains
Snider, Benneth L.....Binghampton
Sobel, Harold.....Brooklyn
Sopey, Victor M.....Long Beach
Speer, David S.....Bronxville
Spielberg, Ignaz.....New York
Spitz, William C.....Brooklyn
Steed, Leonard L.....Binghampton
Stein, Irwin.....Mount Vernon
Steinitz, Gerard.....Fulton
Stempel, Bernard.....Bronx
Sternhill, Bernard.....Brooklyn
Stillger, Walter M.....Hicksville
Strobino, Erastus E.....Rochester
Surks, Sylvan N.....New York
Swartz, Irving.....Syracuse
Swenson, Sven A.....Brooklyn
Tarantola, Paul I.....Brooklyn
Taylor, Gilbert H.....New York
Teichner, Herbert Z.....New York
Thompson, John E. Jr.....Albany
Thompson, Robert C.....New York
Tomlinson, David R.....Watervilet
Toppin, Kenneth L.....New York
Uhry, Edmond Jr.....New York
Ulin, Robert.....Brooklyn
Ullman, Robert A.....Buffalo
Valente, Vincent J.....Staten Island
Valergakis, Frederick E. G.....Brooklyn
Verzeano, Marcel.....New York
Vetter, John J.....New York
Vinograd, Abe.....Brooklyn
Vogel, Stanley S.....Brooklyn
Wagner, Edward J.....New York
Warren, Stafford L.....Rochester
Watkins, Melvin B.....New York
Weinberg, Abraham.....Margaretville
Weiner, Irwin.....Brooklyn
Weiner, Murray.....Bronx
Weiss, Edward J.....Poughkeepsie
Werlin, Samuel J.....Troy
Westmoreland, Robert E.....New York
Weston, Lanpher C.....Rochester
Wetherell, Frederick E.....Syracuse

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Whitman, Morris B.....Bronx
Wilkens, Robert.....Bronx
Wilkes, Frederick B.....Buffalo
Winer, Julius H.....New York
Winslow, Thomas S.....New York
Wirth, Lothar.....Rensselaer
Wishnow, Hyman L.....Flushing
Woeppel, Charles J.....Buffalo
Wohl, Hyman.....New York
Wolff, Eugene F.....Newburgh
Wolinsky, Allan Y.....New York
Wulwick, Michael.....Brooklyn
Zambron, Stanley J.....Lackawanna
Zatuchne, Samuel.....Brooklyn
Zavoyianis, Savas.....Brooklyn
Zeidberg, Louis D.....Forest Hills
Zeltmacher, Kurt.....Woodside, L. I.
Zirlinger, Otto.....New York
Ziselman, David L.....Brooklyn
Zucker, Albert.....New York
Zuckerbrod, Morris.....Bronx

North Carolina

Booth, Orin W.....Durham
Clarke, Eugene H.....Greensboro
Hendrick, Harry V.....Cliffside
Hunter, John G.....Greensboro
Kinlaw, James B.....Elizabethtown
McDevitt, John B.....Charlotte
McNeill, Claude A. Jr.....Elkin
Neill, Robert C.....Durham
Parrott, William T. Jr.....Kingston
Reinhardt, James F.....Durham
Ringer, Paul H. Jr.....Asheville
Royster, Thomas S. Jr.....Henderson
Rubin, Adrian S.....Greensboro
Smith, David C.....Lexington
Stone, Robert E.....Chapel Hill
Wheless, Thomas O.....Louisburg
White, Donald P. Jr.....Sanford
Wickman, William.....Winston-Salem
Wilder, Raboteau T.....Glen Alpine
Womble, Edwin C.....Wagram
Wright, James T.....Shawboro
Wright, Richard B. Jr.....Salisbury

North Dakota

Sorenson, Allen R.....Minot
Strom, Adrian D.....Landa
Wicklund, Maurice M.....Grenora

Ohio

Adams, Harley S. Jr.....E. Cleveland
Austin, Otis G.....Alliance
Banfield, Harlow F. Jr.....Wellsville
Bassett, Gardner G.....Cleveland
Baston, William P.....Cincinnati
Beall, John A.....Galion
Cajacob, Melville E.....Cincinnati
Chudde, Sam S.....Dayton
Cogswell, Robert C. Jr.....Hamilton
Crawley, Clarence R.....Mt. Healthy
Dehr, John W.....Cleveland
Dickerhoof, Gilbert R.....Bellaire
Franken, Robert.....Columbus
Friedland, Fritz.....Warren
Gatti, Frank G.....New Waterford
Gleitsman, Louis A.....Akron
Goler, George G.....Cleveland
Gove, Roger M.....Urbana
Hamm, Robert S.....Columbus
Hancock, Thomas J.....Marietta
Hattendorf, Otto W.....Cincinnati
Haugh, Donald C.....Wellsville
Hubay, Charles A.....Shaker Heights
Irvin, Emory R.....Bradford
Jackel, Merl M.....Cleveland Heights
Jentes, Paul K.....Wooster
Johnston, Charles E.....Columbus
Kahn, Marcel T.....Cleveland Heights

Ohio—Continued

Kent, Gerald T.....Cleveland
Kilpatrick, Elmer M.....Columbus
Kleinman, Leonard A.....Glouster
Kunnen, Albert A.....Cincinnati
Leeds, Horace M.....Winchester
Madow, Leo.....Cleveland Heights
Millonig, Arthur F.....Dayton
Monger, William D.....Columbus
Norris, James W.....Columbus
O'Bell, John J.....Kingsville
Pagano, James J.....Canton
Peatee, Roger A.....Weston
Perlman, Robert.....Cincinnati
Petersilge, Carl L.....Lakewood
Ransohoff, Joseph.....Cincinnati
Rentschler, John H.....Conneaut
Rini, Anthony C.....Cleveland Heights
Ripsteen, Joel S.....Youngstown
Sawyer, Warren C.....Marion
Scanlon, Edward F.....Steubenville
Schaefer, William L. Jr.....Middletown
Scherer, John R.....Portsmouth
Schildt, Paul J.....Springfield
Schipfer, Francis H.....Cleveland Heights
Schroeder, Edmund F.....Cleveland Hgts.
Schwartz, Arthur M.....Cincinnati
Schwartz, Ferdinand F.....Painesville
Seaman, Arthur J.....Cincinnati
Seitz, Howard M.....Wapakoneta
Shepley, Felix R.....Massilon
Smith, Clarence V.....Cincinnati
Stewart, Dudley M.....Toledo
Stilwill, Maurice E.....Massillon
Stoll, Richard G.....Cleveland
Strong, James C. Jr.....Cincinnati
Tapper, Ralph W.....Dayton
Tillman, Norbert A.....Lorain
Ulmer, Arthur H. Jr.....Toledo
Utrecht, Arthur C. Jr.....Cincinnati
Volpe, Peter A.....Worthington
Wadsworth, Charles L.....Cincinnati
Waltz, Frederick A.....Columbus
Weissmann, Carl J.....Cincinnati
Westcott, Richard N.....Cincinnati
Whitaker, Jack L.....Cleveland
White, Harold W.....Cincinnati
Whitehouse, John D.....Cincinnati
Whittenberger, James L.....Ashtabula
Will, David R.....McArthur
Winter, Andrew A.....Toledo
Woolsey, Frank M. Jr.....Cleveland
Wright, Joseph F.....Cincinnati
Wright, Norman S.....Springfield
Xander, Gordon W.....Columbus
Zlotnick, Sam.....Youngstown
Zodikoff, Rudolph M.....Mariemont

Oklahoma

Bassett, Clifford M.....Cushing
Cohenour, Howard M.....Tulsa
Conrad, Loyal L.....El Reno
Fluhr, William F.....Oklahoma City
Hilderbrand, Harold E.....Commerce
Macroy, Paul D.....Bethany
Martin, Wiley W.....Boley
Sandlin, Robert E.....Henryetta
Seid, Sidney E.....Chilocco
Sell, Lawrence S.....Oklahoma City
Trimble, David N.....Tulsa
Watson, Charles W.....Tulsa

Oregon

Ballard, Robert F.....Portland
Bretherton, Walter W.....Portland
Cherry, Howard L.....Portland
Davis, Thomas A.....Portland
Havlicek, Theodore L.....Portland
Nichols, Gregory B.....Portland
Rawls, Frederick F.....Corvallis
Rummell, Philip M.....Dillard
Westerberg, Harry.....Portland
Whitely, James M.....Portland

Pennsylvania

Anderson, Robert L. Jr.....Pittsburgh
Ard, Robert S.....Pittsburgh
Arnheim, Falk K.....Pittsburgh
Baylor, Louis P.....Northumberland
Bertsch, Albert M. Jr.....Philadelphia
Beyer, William F. II....Punxsutawney
Black, Samuel R.....Turtle Creek
Bransford, Lee E. Jr.....Upper Darby
Brenner, Sidney.....Philadelphia
Brown, Charles W.....Waynesburg
Brown, Patrick N.....Philadelphia
Bucci, Joseph F.....Derry
Butt, Frank H. Jr.....Pittsburgh
Callaghan, Philip J.....Williamsport
Cheraskin, Emanuel.....Upper Darby
Clark, William K.....Brentwood
Cohen, Harry W.....Philadelphia
Darby, Walter S.....Philadelphia
Davidson, Jay H.....Philadelphia
Davis, Sidney II.....Milton
Deitrick, George A. Jr.....Sunbury
Dewees, Robert L.....Glen Mills
Digiacobbe, Hugo R.....Gallitzin
Dillman, Melvin A.....Roxborough
Douds, Howard N.....Beaver Falls
Durr, Theodore H. Jr.....Philadelphia
Faludi, Heniz K.....Philadelphia
Filipek, Walter J.....W. Hazleton
Finsterwald, James F.....Dormont
Frantz, Alfred S.....Glenside
Fulton, William O.....Harrisburg
Garfinkle, Benjamin M. Jr....Harrisburg
Glick, Israel.....McKees Rocks
Gosnell, Cleason E.....Millvale
Helm, John D. Jr.....New Providence
Hilferty, Daniel J. Jr.....Swarthmore
Hill, Frank B.....Waynesburg
Ivins, Joseph L.....Chester
Jack, Roy C.....Dunkard
Kirkpatrick, Daniel W.....Conshohocken
Korey, Joseph J.....Shenandoah
Lace, Richard E.....Vandergrift
Lawrence, Granville A. Jr...Philadelphia
Learner, Norman.....Philadelphia
Leighty, Ralph G.....Swissvale
Leiser, John Y.....Philadelphia
Levine, Macy I.....Johnstown
Lockwood, Raymond M.....Clarion
Luongo, Joseph C.....Philadelphia
McCabe, Edward B.....Carbondale
McGahey, Frank E. Jr.....Pittsburgh
McIntyre, Donald K.....Drexel Hill
McKeating, Philip J.....Pittsburgh
McMullin, Joseph F.....Washington
Mallin, Aaron W.....Philadelphia
Manley, Russell M.....Canton
Mechling, Robert S.....Pittsburgh
Monsour, Robert G.....Jeannette
Montgomery, Mark R.....Fairchance
Morell, Clarence J.....Meadville
Morgan, Allan V.....Pittsburgh
Munchak, John Jr.....Scranton
Murphy, Arthur I. Jr.....Allison Park
Musulin, Rade R.....Pittsburgh
Nadal, Hector M.....Philadelphia
Netsky, Martin G.....Philadelphia
Nycum, John W.....Everett
Pilling, George P. IV.....Philadelphia
Poucher, George E.....Rochester
Powell, Grover C. Jr.....Waynesburg
Preis, Francis J.....Philadelphia
Puszynski, Vincent J.....Philadelphia
Reed, Elmer M.....Beaver Falls
Reilly, William M. Jr.....West View
Renton, Gordon L.....Pittsburgh
Rinaldi, Lucian L.....White Haven
Ritter, Charles W.....Philadelphia
Robbins, William S.....Philadelphia
Rogers, Lewis L. III.....Kingston
Roth, Russell B.....Erie
Rupp, Nevin H.....Reading
Sarshik, Milton.....Philadelphia

PHYSICIANS SEPARATED FROM SERVICE

Pennsylvania—Continued

Satinsky, Victor P.....Philadelphia
Scanlon, James P.....Llanerch
Schafer, Donald W.....Cincinnati
Schmidt, Edward.....Ben Avon
Sedwick, Sidney G.....Kittanning
Seltzer, Harry.....Pittsburgh
Shackleton, John H. Jr.....West Chester
Shaffer, Frank W.....McKeesport
Shelby, Joseph E.....Uniontown
Sherman, Henry K.....Pittsburgh
Shober, John J.....Philadelphia
Sidow, Robert J.....Connellsville
Siegel, Joseph F.....Washington
Singer, Milton.....Pittsburgh
Sivitz, Howard D.....Philadelphia
Skurkay, John B.....Monessen
Smith, Francis A.....Pittsburgh
Staples, Herman D.....Philadelphia
Sterrett, William N.....Mifflintown
Stitt, Donald G.....Apollo
Stone, Brant H.....Philadelphia
Szmal, Chester J.....Glen Lyon
Taylor, Alfred M.....Grove City
Teater, Joseph B.....Port Allegany
Toth, Alex G. Jr.....Canonsburg
Umlauf, Charles W.....Ashland
Van Deusen, Courtland.....Philadelphia
Vogel, Stoughton R.....Philadelphia
Wallace, James E.....Oil City
Weightman, Joseph.....Reading
Weiss, Jacob J.....Nanticoke
Wendling, W. W.....Chapman Station
Wentz, Clarkson.....Wynnewood
White, Albert E.....Morrisville
Wilfong, Thomas L.....Pittsburgh
Wilkos, Francis J.....Erie
Wilson, Thomas R.....Ellwood City
Winter, William J. Jr.....Pittsburgh
Wright, George J. Jr.....Pittsburgh
Wrona, Eugene A.....Glen Lyon
Yoder, Morris L. Jr.....Glen Olden
Yost, Howard A.....Philadelphia
Zaidan, Fred.....Mount Pleasant
Zimmerman, Albert.....Philadelphia

Rhode Island

Chimento, Dominic F.....Westerly
Dolan, William D. Jr.....Westerly
Gorman, John J.....Pawtucket
Jeremiah, Bert S.....Pawtucket
Palumbo, Joseph A.....Providence
Round, Charles B.....Providence
Saklad, Elihu.....Providence
Wittig, Joseph E.....West Warrick

South Carolina

Fairey, Philip W. Jr.....Anderson
Guess, Joseph H.....Denmark
Harter, James W.....Orangeburg
Kerrison, George L.....Charleston
McCaw, William H. Jr.....Columbia
Marshall, Alexander W.....Charleston
Prevost, Claude T.....Anderson
Ramsbottom, John G.....Spartanburg
Scher, Ernest.....Columbia
Spann, Charles L.....Bamberg
St. Allworth, James M.....St. Matthews
Talbert, Thomas W.....Columbia
Wilson, John M.....Darlington

South Dakota

Saylor, Howard L.....Huron

Tennessee

Alexander, James E.....Memphis
Anderson, William E.....Dyersburg
Bryant, Frank L.....Oak Ridge
Hay, Sam H.....Nashville
Hendrix, James H. Jr.....Newbern

Tennessee—Continued

James, G. W.....Humboldt
Ledbetter, John H. Jr.....Clarksville
Kirk, Clyde R.....Greenville
Postlewaite, Jack C.....Nashville
Range, James J.....Johnson City
Seargeant, Lee J. Jr.....Lake City
Siegel, Saul.....Memphis
Smith, Alvin E.....Knoxville
Smith, Joseph R.....Paris
Smith, Stewart P.....Lookout Mountain
Straight, George W.....Nashville
Tankesley, Robert M.....Chattanooga
Trevathan, Robert D.....Bruceton
Turley, Hubert K. Jr.....Memphis
Waggoner, Harry N.....Dyersburg
Watson, George N.....Dover
Webb, Roderick C.....Jackson
Wicker, Walter Jr.....Memphis

Texas

Badt, Morris B.....Ft. Worth
Brindley, Clyde O.....Temple
Denson, Judson S.....Dallas
Gatoura, George J.....Austin
Hardgrove, Thomas J.....Waco
Lee, Henry M.....El Paso
Leggett, Milbourne K.....Houston
Lowrey, Oliver W.....Ft. Worth
Pawelek, Vincent S.....Falls City
Petta, George H.....Fort Worth
Pope, James W.....Doucette
Richman, Irving M.....Dallas
Schuessler, Willard W.....Dallas
Shelton, James L.....Dallas
Smith, John M. Jr.....San Antonio
Strashun, Mat F.....Houston
Swearingen, Revace O.....Austin
Vassallo, Alfred L.....Galveston
Whitten, John W.....Austin
Whittenburg, Ross E.....McAllen
Youens, Willis G. Jr.....Columbus

Utah

Curtis, Lindsay R.....Salt Lake City
Evans, Edward A.....Salt Lake City
Rupper, John H.....Provo
West, James S.....Salt Lake City

Vermont

Caccavo, Francis A.....Barre
Davis, Everett L.....Craftsbury Common
Dwinell, Stanley F.....Bradford
Gleason, Robert I.....Burlington
Haines, Carleton R.....Barre
Patch, Peter E.....Windsor
Rulfo, Henry J.....Barre
Rush, Harold J.....Newport
Simpson, James E.....St. Albans
Whipple, Harry O.....Montpelier

Virginia

Archer, John S. Jr.....Richmond
Cooley, Robert N.....University
Daughtrey, Walter F. Jr.....Holland
Dickie, James W.....Roseland
Farley, William W.....Richmond
Grizzard, William S.....Drewryville
Hagan, Hugh J. Jr.....Roanoke
Handy, Abran E. Jr.....Stuart
Hupp, Cecil G.....Mt. Jackson
Lipman, Ansel.....Portsmouth
Melchior, George W.....Richmond
Nuckols, Cardwell C.....Portsmouth
Payne, Robert L. Jr.....Norfolk
Robertson, Elmer S.....Richmond
Sacchet, Hugo A.....Clifton Forge
Salmon, Charles L. Jr.....Richmond
Smith, Arthur M. Jr.....Charlottesville
Smith, Nelson M.....Winchester

Virginia—Continued

Smith, Thomas B.....Ashland
Sproles, John H.....Pocahontas
Strauss, Maurice B.....Alexandria
Thompson, James A. Jr.....Marion
Vaughan, Warren T. Jr.....Richmond
Ward, Oscar W. Jr.....Phoebus
Williams, Mark B.....Hamden-Sydney
Wooding, Nathaniel H.....Halifax

Washington

Boyd, Jack L.....Seattle
Calhoun, Carl W.....Everett
Hogan, James D.....Renton
Marshall, Curtis.....Seattle
Maurice, Gordon L.....Yakima
Polley, Robert F. L.....Spokane
Whitesel, Glen M.....Spokane

West Virginia

Azar, Philip L.....New Martinsville
Coffield, Olan T.....Morgantown
Lawson, Claude S. Jr.....Shinnston
Lilly, Milton J. Jr.....Frazier's Bottom
Mamula, Peter.....Hollidays Cove
Perkins, Haven M.....Rainelle
Perry, Thornton T. III.....Jefferson Co.
Riser, Harold B.....Wheeling
Stewart, John A.....Little Otter
Strader, Hutton B.....Malden
Swart, Howard A.....Charleston
Thrush, Lawrence B.....Moorefield

Wisconsin

Bill, Kenneth C.....Madison
Chudnoff, Jack S.....Milwaukee
Fox, Robert E.....Fond Du Lac
Grab, John A.....Madison
Healy, William G.....Madison
Henry, Robert B.....Wauwatosa
Jamieson, John G.....Racine
Parkin, Robert C.....Lacrosse
Quandt, Raymond W.....Watertown
Reinert-Werner, Jans H.....Eland
Rowe, Richard J.....Dodgeville
Santer, Daniel G.....Milwaukee
Schaefer, Leroy W.....Milwaukee
Schlenker, George M.....Union Grove
Schroeder, Jack De Vea.....Janesville
Stemper, John A.....Milwaukee
Stenberg, Sherman T.....Hudson
Strewler, Gordon J.....Racine
Sweed, Aaron.....Milwaukee
Tatum, Howard J.....Madison
Triggs, Perry O.....Wisconsin Rapids
Usow, Eugene J.....Milwaukee
Veit, Henry.....Milwaukee
Weller, Ross R.....Milwaukee
Wynn, Sidney K.....Milwaukee

Canal Zone

Selinkoff, Joshua J.....Gatun

Hawaii

Ing, Edmund T. K.....Honolulu
You, Richard W.....Honolulu

Puerto Rico

Rivera, Julio V.....Rio Piedras
Rullan, Antonio.....Yauco

Canada

Banting, Kenneth C.....Lucan
Modlin, Herbert C.....Montreal
Yoachim, Maurice.....Cardston

Bermuda

Scott, Arthur E.....Tuckers Town

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CONNECTICUT

Personal.—Dr. David R. Lyman, director of Gaylord Farms, Wallingford, was elected to honorary membership in the Connecticut Tuberculosis Association at its seventh annual meeting in New Haven, October 30, in recognition of the forty years he has devoted to his work in tuberculosis.——Dr. John D. Booth, Danbury, has been appointed to the Connecticut Medical Examining Board to fill the unexpired term of Dr. Daniel C. Patterson, recently deceased.

Course for Laymen in Mental Health.—The first in a series of orientation courses for laymen in the problems of mental health was held at the Connecticut State Hospital, Middletown, October 30. Sponsored by the joint committee of the state mental hospitals, the all day conference was attended by approximately twenty-five representatives of the press, clergymen and social workers. The program featured talks by officials of the hospital, motion pictures, panel discussions and study groups.

Rehabilitation Group Formed.—The Connecticut Rehabilitation Association was organized in Hartford, October 30, to promote the general cause of rehabilitation for mentally or physically disabled children and adults. Col. James M. Quinn, New Haven, chairman of the State Veterans Reemployment and Advisory Commission, was elected president of the organization; Randall Hamerick, Ph.D., Bridgeport, vice president, and Frederick W. Novis, acting director of the state board of education, secretary-treasurer. According to the constitution adopted at the meeting, the organization will "encourage and stimulate within Connecticut programs of guidance, physical restoration, training and placement in employment for all groups of disabled persons; promote and encourage the development of rehabilitation centers, and affiliate with the National Rehabilitation Association, Inc." About two hundred representatives of medicine, education, social welfare and industry attended the organization meeting.

DISTRICT OF COLUMBIA

Early Ambulation and Rapid Rehabilitation.—A symposium on "Early Ambulation and Rapid Rehabilitation of Hospitalized Patients" was conducted in Washington, November 13, with the following speakers: Dr. Howard A. Rusk, New York, guest speaker; Dr. Hugh H. Hussey Jr., medicine; Dr. James R. Veal, surgery, and Dr. William D. Terrell Jr., obstetrics. A joint meeting of the Medical Society of the District of Columbia and the Baltimore City Medical Society was addressed by Dr. John H. Mulholland, New York, on "Maintenance of Fluid Balances in Surgical Patients." This meeting marks the resumption of an old custom, abandoned during the war, of the Baltimore society meeting jointly with the Medical Society of the District of Columbia.

Graduate Work in Ophthalmology.—The George Washington University department of ophthalmology is planning the resumption of the intensive postgraduate courses in ophthalmology, the next course to be given the week of February 3-8 inclusive. These courses were discontinued during the war. The following guest lecturers are assisting the resident staff on the program:

Dr. Francis H. Adler, Philadelphia.
Dr. James Baird, Atlanta, Ga.
Dr. Sylvester Judd Beach, Portland, Maine.
Dr. Hermann M. Burian, Boston.
Dr. Ramon Castroviejo, New York.
Dr. Clyde A. Clapp, Baltimore.
Dr. Francis B. Fralick, Ann Arbor.
Deane B. Judd, Ph.D.
Dr. Peter C. Kronfeld, Chicago.
Dr. Walter I. Lillie, Philadelphia.
Dr. Angus L. MacLean, Baltimore.
Mr. Philip L. Salvatori, New York.
Dr. Harold G. Scheie, Philadelphia.
Dr. Edmund B. Spaeth, Philadelphia.
Dr. Frederick W. Stocker, Durham, N. C.

The tenth annual postgraduate course in ocular surgery, pathology and orthopedics will be given during the week of January 27-February 1. This is a practical course and is limited to thirty participants. For further details of the postgraduate courses in ophthalmology write to the secretary, Mary E. Kramer, Suite 34, 1801 K Street N.W., Washington 6.

IOWA

Personal.—Dr. Donald M. Harris has resigned as director of health district number 4, with headquarters in Sioux City, to accept a similar position of the Chippewa County Health Unit at Sault St. Marie, Mich. District number 4 includes the counties of Woodbury, Plymouth, Monona, Crawford and Ida. ——Dr. Joseph A. Uran, Riceville, recently completed his fiftieth year in the practice of medicine.

KENTUCKY

Physician Honored.—Dr. John E. Kincheloe Day was observed in Hardinsburg recently to honor the physician who has practiced in the county for forty-seven years. One feature of the celebration was the starting of a drive for funds for a county hospital to serve as a memorial to the physician. Dr. Kincheloe was recently presented with the E. M. Howard Memorial Award of the Kentucky Medical Association (THE JOURNAL, November 9, p. 591).

MASSACHUSETTS

Experimental Study of Diabetes.—The entire population of the town of Oxford, 5,100 men, women and children, on October 7 became "guinea pigs" in a form of experiment to check the spread of diabetes, according to the New York *Sun*. It was stated that this was the first time that a whole community would be tested for diabetic symptoms. It was planned to obtain blood and urine specimens for laboratory examinations, the reports going to private physicians within two days for "quick treatment."

MISSISSIPPI

Societies Merge.—The North Mississippi and the Northeast Mississippi Medical Societies merged October 17, retaining the name North Mississippi Medical Society. Dr. Ashford A. H. Little, Oxford, was named president.

Loans to Medical Students.—Applications for loans to medical students to become effective in February 1947 will be received at the state medical education board offices in Jackson, beginning November 1. Scholarship loans are made available to worthy Mississippi men and women attending medical school by a program authorized by the 1946 legislature. Recipients of such loans sign a state contract to return to rural Mississippi for a period of two to five years following completion of medical education and one year internship. Interested persons should address inquiries to Mrs. Maria Voskamp, Executive Secretary, Mississippi State Medical Education Board, Room 37, 200 North Street Building, Jackson. New application forms have been prepared and are now ready for distribution. Students wishing to be considered for February scholarship grants are urged to get in touch with the state medical education board immediately.

NEBRASKA

Ninety Years of Age.—Dr. Martha E. Clark, who practiced medicine in Omaha twenty-eight years, celebrated her ninetieth birthday October 24. Dr. Clark graduated at Hahnemann Medical College and Hospital, Chicago, in 1897.

NEW MEXICO

State Medical Election.—Dr. Victor Adams, Raton, was named president-elect of the New Mexico Medical Society at its recent meeting, and Dr. Charles A. Miller, Las Cruces, was installed as president. Other officers include Dr. Donat F. Monaco, Gallup, vice president, and Dr. Harold L. January, Albuquerque, secretary-treasurer.

NEW YORK

Personal.—Dr. Robert E. A. Milne, Le Roy, has been appointed a member of the board of education of Rochester.——Dr. Charles B. Perkins, Franklinville, has been appointed coroner of Cattaraugus County to succeed the late Dr. Halley W. Hammond.——Dr. Harold J. Harris, Westport, gave the introductory speech and first lecture before the V. Reunion para el Estudio de la Brucelosis, October 28-November 2. The title of the lecture was "The Opsonocytophagic Test in Brucellosis; Some Observations on Its Technical Factors, Uses and Limitations."

New York City

Lectures on the Cardiovascular System.—Dr. Eric Ogden, visiting professor, New York University College of Medicine, and professor of physiology, University of Texas Medical Branch, Galveston, opened a series of three lectures November 6 on the cardiovascular system. The first lecture

was on "Experimental Hypertension and Its Extrarenal Sequel"; the second, November 13, on "The Function of the Cardiovascular System and Its Regulation," and the third, November 20, on "Cardiovascular Integration by Endocrine and Nervous Mechanisms."

Recent Advances in Therapy.—The Mount Sinai Hospital of New York will begin a series of lectures on recent advances in therapy, December 4, with a talk by Dr. John G. Gibson II, Boston, on "Advances in Blood Transfusion Therapy." Others in the series will be:

Dr. William Dock, Brooklyn, December 18, Physiologic Problems in the Treatment of Heart Disease.
Dr. Arthur J. Patek Jr., January 8, The Dietary Treatment of Cirrhosis of the Liver.
George R. Cowgill, Ph.D., New Haven, January 22, Recent Advances in Our Knowledge of Vitamins.
Dr. Hiram Merritt, February 19, The Treatment of Epilepsy.
Dr. Sidney C. Madden, Atlanta, Ga., March 5, Amino Acid Therapy.
Dr. Alvan L. Barach, March 19, Physiological Therapy in Diseases of Respiration.
Dr. Lester R. Dragstedt, Chicago, April 2, Section of the Vagus Nerves to the Stomach in the Treatment of Peptic Ulcer.
Dr. Edwin B. Astwood, Boston, April 16, The Medical Treatment of Hyperthyroidism.

Cancer Hospital Planned by City.—Plans were filed November 1 for a new 300 bed, twelve story city hospital for the treatment of chronic cancer patients. The hospital will be built on the east side of First Avenue between Sixty-Seventh and Sixty-Eighth streets. The cost, according to the plans filed with the Department of Housing and Building, will be $2,900,000, the New York *Times* stated November 2. Land for the new hospital was donated to the city by the Memorial Hospital, Dr. Edward M. Bernecker, commissioner of hospitals, explained. With Memorial Hospital and the new Sloan-Kettering Institute for Cancer Research now under construction, the city's hospital will be one unit of a center devoted to the study and treatment of cancer. When the building is completed some time in 1948, Memorial Hospital will nominate the staff and will also make available to the city institution its treatment facilities. Thus the city will be spared the cost of duplicating expensive x-ray treatment equipment. According to the plans the city hospital will contain laboratories, operating rooms, offices, classrooms, wards and living quarters for the hospital staff. The offices and laboratories will be on the first floor, classrooms on the mezzanine, and wards and utility rooms on the next seven floors. Living quarters will be on the tenth floor, a dining room on the eleventh floor and an apartment on the twelfth floor. A penthouse also is included in the plans.

OHIO

Student Prize.—Through the cooperation of Mead Johnson and Company and the Museum of the Cleveland Medical Library, a prize of $100 is offered to the student in the school of medicine of Western Reserve University submitting the best thesis on a subject relating to the history of medicine. It is suggested that exhibits in the museum might furnish leads for such an essay. The award will not be made unless the quality of the articles submitted warrants such action. Contributions should be typewritten in double space on good white paper and on one side of the sheet only. The thesis must be long enough to provide a convincing argument and short enough to maintain interest. All manuscripts shall become the property of the Cleveland Medical Library. They must be mailed to the director of the Howard Dittrick Museum of Historical Medicine, 11000 Euclid Avenue, not later than March 1.

PENNSYLVANIA

Philadelphia

Julius Comroe Promoted.—Dr. Julius H. Comroe Jr., formerly assistant professor of pharmacology, University of Pennsylvania School of Medicine, has been appointed professor of physiology and pharmacology in the university's graduate school of medicine.

Clinic Named for Physician.—The new 18 bed clinic for the hospitalization of alcoholic addicts at St. Luke's Hospital has been named the Charles Dudley Saul Clinic in honor of the medical director of the hospital. Credit goes to Dr. Saul for development of the clinic. In the first four months of its operation the clinic has cared for 238 patients.

Hospital News.—Tumor Day was observed at the Jewish Hospital November 19 with combined pathologic, radiologic and oncologic conferences presided over by Dr. Fred W. Stewart, Memorial Hospital, New York. Another session will be addressed by Dr. Charles F. Geschickter, Baltimore, on "Recent Advances in the Etiology and Treatment of Cancer."

SOUTH CAROLINA

Allergy Meeting.—The second annual meeting of the Southeastern Allergy Association will be held January 18-19 at the Atlanta-Biltmore Hotel, Atlanta, Ga. Hotel reservations should be made directly with the hotel. Dr. Hal M. Davison, Atlanta, is president of the Southeastern Allergy Association, Dr. J. Warrick Thomas, Richmond, Va., vice president, and Dr. Emma B. MacInnis, Columbia, S. C., secretary-treasurer.

First State Health Officer.—South Carolina is said to be the first state to have had a state health officer, according to the book on Government in Public Health by Dr. Harry S. Mustard, New York. The health officer was appointed by a special act of the general assembly of South Carolina. The act of 1712 was repealed in 1721. In 1908 the general assembly passed another act creating the office. The first state health officer appointed under the 1908 act was Dr. Charles F. Williams, Columbia. In 1911 he resigned and was succeeded by Dr. James A. Hayne, Columbia, who served continuously for thirty-three years before resigning in 1944, when he was succeeded by Dr. Benjamin F. Wyman, Columbia.

TENNESSEE

Changes in Health Officers.—Dr. John M. Weir Jr., New York, has been named health officer of the Obion-Lake County Health Unit, filling the vacancy that occurred when Dr. William L. Phillips resigned last October to enter private practice at Newbern.——Dr. Price H. Duff, formerly of Crassville, has been appointed health officer of Rutherford County, Murfreesboro, succeeding Dr. James B. Black, who resigned, effective July 1, to enter the private practice of medicine.——Dr. Walter C. Humbert, Erwin, has been appointed director of Giles and Lincoln counties.——Dr. George K. Henshall Jr., Chattanooga, has been named director of the division of maternal and child health, Chattanooga-Hamilton County Health Department, to succeed Dr. Rutherford O. Ingham.

TEXAS

Special Lectures.—At the seventeenth annual meeting of the Texas Association of Obstetricians and Gynecologists in Galveston November 2 the Calvin R. Hannah Lecture was delivered by Dr. William F. Mengert, Iowa City, on "Pelvic Cellulitis" and the J. J. Y. Paine Lecture by Dr. John Rock, Boston, on "Menstrual Disorders." At a special postgraduate conference in cooperation with the maternal and child health division of the Texas State Board of Health and the department of pediatrics of the University of Texas Medical Branch, Galveston, during the week of October 28 Dr. Daniel C. Darrow, New Haven, gave the William Buchanan Lecture on "The Treatment of Infant Diarrhea."

Dallas Health Museum.—On September 17 at luncheon in the Baker Hotel the Dallas Health Museum was formally organized. The project is one of the first adopted by the newly organized Dallas Academy of Medicine. The Dallas Park Board has designated a building in Fair Park for the use of the Dallas Health Museum, which will be considered a permanent Dallas institution. It opened officially October 5 during the state fair of Texas with Dr. Bruno Gebhard, director of the Cleveland Health Museum, as the principal speaker. Mr. R. L. Thomas has been named the first president of the Dallas Health Museum, Mr. Charles R. Moore and Mrs. Margurite Hays as vice president, Mr. W. Ray Spears as treasurer and Dr. Milford O. Rouse, Dallas, as secretary.

VIRGINIA

Portrait of Physician.—An oil portrait of the late Dr. William O. Smith was recently presented to the Piedmont General Hospital, Altavista. Dr. Smith practiced in Pittsylvania County and Altavista for more than forty years; he died in 1940.

Memorial to Dr. McCluer.—The McCluer Clinic is to be established in Alexandria under the auspices of the Virginia Cancer Foundation with Dr. Herbert D. Wolff Jr., Alexandria, as director, newspapers reported October 9. The clinic will be a center for the diagnosis and treatment of cancer and will be a memorial to the late Dr. John C. McCluer, Parkersburg, who died in 1945. The memorial is being set up to honor Dr. McCluer, who, during his twelve years as director in Alexandria, was a leader in the improvement of community health facilities.

First Chief Medical Examiner.—Dr. Herbert S. Breyfogle, St. Louis, has been appointed the first chief medical examiner in Virginia. Dr. Breyfogle will have direct supervision of the administration of an act of the 1946 general

assembly which established an entirely new system of coroners' examinations and reports. Under the act the report is required from each local coroner on the circumstances of every death occurring in his county or city under unnatural or suspicious circumstances. Dr. Breyfogle graduated at the University of Chicago School of Medicine in 1937 and until his new appointment was director of the medicolegal department of St. Louis County, where he was also acting coroner.

Personal.—Drs. George H. Carr Jr., Portsmouth, and Guy W. Horsley, Richmond, are members of the state board of medical examiners for the second and third districts, respectively, succeeding Dr. Philip S. Moncure, Norfolk, and Dr. Hack U. Stephenson, Richmond, whose terms expired July 1. Dr. Moncure has served on the board continuously since June 1918 and Dr. Stephenson since December of the same year. The board adopted a resolution in appreciation of the work done by these two physicians.——Dr. James L. Hamner, Mannboro, has been appointed a member of the state board of health, effective July 1, succeeding Dr. John B. Jones, Petersburg, resigned.——Dr. Thomas B. Pope, Kingston, has been appointed coroner of the city of Petersburg to succeed Dr. Henry M. Snead, who recently resigned.

WISCONSIN

Fall Program Opens for Medical Society.—The first of the 1946-1947 series of meetings of the University of Wisconsin Medical School was held October 15 in Madison with a presentation by Dr. Harold P. Rusch, Madison, on "Research Projects at the McArdle Memorial Laboratory" and James A. Miller, Ph.D., Ann Arbor, and Elizabeth C. Miller, Ph.D., on "The Present Status of Research on the Hepatic Carcinogen p-Dimethylaminoazobenzene." All the speakers are members of the staff of the McArdle Memorial Laboratory at the university.

New Cancer Division.—The Wisconsin State Board of Health in August authorized the establishment of a new cancer division to intensify the crusade against cancer. A specially qualified physician will be sought as supervisor. The new department will cooperate with existing anti-cancer groups in the state, including the Field Army and the operating committee of the State Medical Society of Wisconsin. According to the Wisconsin State Board of Health Bulletin, cancer has claimed 92,062 lives in Wisconsin during the past twenty-six years, an average of more than 3,500 yearly. The disease has been the second leading cause of death since 1920.

Physicians Honored.—A public program was held in the Oconomowoc State Park, September 29, to honor Dr. Michael R. Wilkinson on the occasion of his eighty-second birthday. Dr. Wilkinson has been practicing in the city fifty-three years. He has held various offices in the Waukesha County Medical Society and is currently president of the Waukesha County Historical Society and athletic director of Oconomowoc High School. He has four sons who are physicians.——Dr. John M. Dodd, Sr., who has practiced in Ashland for fifty-six years, was entertained by the Odd Fellows, October 5, to celebrate his eightieth birthday.——Dr. W. H. Vosburgh, Denmark, was guest of honor recently at a public gathering honoring his fifty years' service to the community.

HAWAII

Personal.—Dr. Marcus Guensberg, formerly of New York, has been appointed medical director of the Territorial Hospital, Kaneohe, to succeed Dr. Ellis A. Stephens, who resigned to enter private practice.——Dr. and Mrs. (Dr. Tai Heong Kong) K. R. Li, Honolulu, celebrated their golden anniversary with an open house on July 14. This date also was the cause for celebration of fifty years of medical practice in Hawaii for each of the couple as well as their seventy-first birthdays.——Dr. Theresa Woo, formerly a captain in the medical corps of the army, was recently appointed pediatrician with the bureau of maternal and child health of the board of health. She succeeds Dr. Martha W. Groves, née Martha C. Wager, who resigned in June.

PUERTO RICO

Hospital Construction.—At a recent meeting held at the governor's palace in San Juan of representatives of the Insular Department of Health, the U. S. Public Health Service and the Planning Board, a general discussion of the hospital construction program for the next five years resulted in the creation of a committee to coordinate the work to be carried out in order that Puerto Rico might receive the benefits of the hospital construction program with federal aid. It is estimated that Puerto Rico will receive no less than $12,000,000 of federal aid for the construction of hospitals during the next five years. Governor Piñero has designated an advisory committee to prepare and execute the proposed program. Puerto Rico will contribute an amount of funds equal to that designated by the act of Congress. As a result of the large population of this island and the tremendous need for the construction of hospital facilities, as well as the reconstruction of existing facilities, the overall allocation of funds will be more than $25,000,000 for the next five years for both insular and federal funds. The Planning Board of Puerto Rico has adopted a master plan for the construction of district hospitals and also a preliminary master plan for municipal hospitals that will serve as a guide in the preparation of the whole program for the island.

GENERAL

Examinations in Otolaryngology.—The American Board of Otolaryngology will conduct examinations in 1947 at the Coronado Hotel, St. Louis, April 16-19, and Palmer House, Chicago, October 7-11.

Marriage and Family Health Education.—Janet F. Nelson, Ph.D., has been appointed director of marriage and family life education of the Planned Parenthood Federation of America. The service is new and will reach 350 local groups affiliated with the federation to develop services considered essential to the strengthening of the American family. Dr. Nelson has been serving as consultant on personal and family relationships from the U. S. O. division of the Y. W. C. A.

Urology Award.—The American Urological Association offers an annual award not to exceed $500 for an essay (or essays) on the result of some clinical or laboratory research in urology. Competition will be limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals. For full particulars write the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tenn. Essays must be in his hands before May 1, 1947. The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Statler, Buffalo, June 30-July 3, 1947.

Mayo Foundation Receives Pharmaceutical Award.—The Mayo Foundation for Medical Education and Research will be presented with the award of the American Pharmaceutical Manufacturers' Association at its meeting in New York, December 9. The award of distinction goes to the foundation in recognition of its great contributions to public health, by fundamental research in the field of medical sciences, for the profound and lasting benefit of mankind. Isaiah Bowman, LL.D., president, Johns Hopkins University, Baltimore, will make the presentation address and Dr. Donald C. Balfour, director, Mayo Foundation for Medical Education and Research, Minneapolis, the speech of acceptance. Speakers during the ceremony will be:

Dr. Louis Schwartz, Washington, D. C., Progress in Fungus Disease Therapy.
Dr. Andrew Yeomans, Baltimore, Progress in Rickettsial Disease Therapy.
Dr. Samuel M. Feinberg, Chicago, Progress in Allergy Therapy.
Dr. Edward H. Rynearson, Minneapolis, Progress in Hormone Therapy.
Dr. Chester S. Keefer, Boston, Progress in Antibiotic Therapy.

Changes in Status of Licensure.—The California State Board of Registration in Medicine announces the following:

Dr. Isaiah J. Waterman, Seal Beach, Calif., license restored August 6.
Dr. Lee E. Smith, Oakland, Calif., license restored August 5.
Dr. John Jerome Tobinski, Los Angeles, license restored August 5.
Dr. Eugene Curry Nelson, Los Angeles, license restored August 5.
Dr. Gottfried Karl Friedrich Schnarrenberger, Los Angeles, license suspended for six months, effective August 17.
Dr. William Everts Downing, Clovis, Calif., license suspended for one year, effective August 17.
Dr. James Arthur Moran, Carmel, Calif., license suspended for one year, effective August 17.
Dr. William T. Engleman, San Bernardino, Calif., license revoked August 6.

The New York State Board of Medical Examiners announces the following:

Dr. Maynard Smith Owen, New York, license suspended for one year, effective July 1.
Dr. Edward Parrish, New York, license suspended for six months, effective July 26.
Dr. Meyer Louis Alpert, New York, license revoked July 31.

Meeting of College of Surgeons.—The clinical congress of the American College of Surgeons will be held in Cleveland, December 16-20, under the presidency of Dr. William Edward Gallie, Toronto. Headquarters will be in the Cleveland Public Auditorium and the Statler and Cleveland hotels, with most of the sessions, except the clinics at the hospitals, being held in the auditorium. The first Martin Memorial Lecture will be a feature of the presidential meeting Monday evening with Dr. Edward D. Churchill, Boston, as the speaker on "The American Surgeon, Army of the United States." The lecture

supplants the annual oration in surgery and is a memorial to both Dr. Franklin H. Martin and Mrs. Martin. The founder of the college and of *Surgery, Gynecology and Obstetrics* was joined by his wife in making the college the beneficiary at their deaths of the journal, together with its physical plant operated by the Surgical Publishing Company of Chicago, of which they were the owners. Dr. Martin died in 1935 and Mrs. Martin in 1945. The program will include numerous scientific papers on various subjects, symposiums on care of the patient before and after operation, venous thrombosis and prevention of pulmonary embolism, antibiotic and chemotherapeutic agents in surgery, orbital reconstruction including prosthesis, the treatment of deafness, surgery of the nasal accessory sinuses, plastic surgery of the head and neck, cancer, fractures and other traumas and advances from war experiences. There will also be a forum on fundamental surgical problems and various panel discussions. Dr. Edwin W. Ryerson, Chicago, will deliver the Fracture Oration on "Modern Methods in the Treatment of Fractures" Wednesday evening.

Radiology Meeting.—The thirty-second meeting of the Radiological Society of North America will be held at the Palmer House, Chicago, December 2-6, under the presidency of Dr. Lowell S. Goin, Los Angeles, who will speak on "Radiology and the Future." Other speakers will include:

Dr. Stanley S. Nemec, St. Louis, Differential Diagnosis of Retrocardiac Shadows.
Dr. John D. Camp, Rochester, Minn., Calcification of the Cerebral Basal Ganglions and Its Roentgenologic Significance.
E. Dale Trout and Z. J. Atlee, Chicago, Filter Value Inherent in Very High Voltage Radiation Therapy Equipment.
Anna Goldfeder, D.Sc., New York, Further Studies on the Relation Between Radiation Effects, Cell Viability and Induced Resistance to Malignant Growth: IV. Effects of Roentgen Rays on Mammary Tumors Autogenous to Inbred Strains of Mice (dbrB and C3H).
Dr. Sydney F. Thomas, Palo Alto, Calif., Appendical Coproliths.
Dr. Abraham E. Rakoff, Philadelphia, The Endocrine Factors in Pelvic Tumors, with a Discussion of the Papanicolaou Smear Method for Diagnosis.

There will be symposiums on carcinoma of the uterine fundus and cervix, treatment and care of advanced cancer patients, diseases of the chest and x-ray diagnosis and therapy of bursitis and arthritis. The Carman Lecture will be delivered by Dr. Robert N. Newell, professor of radiology, Stanford University, San Francisco, on "Quality of Radiation in Therapy."

Narcotic Violations.—The Bureau of Narcotics of the U. S. Treasury Department announces the following:

Dr. Herbert A. Wilson, McAlester, Okla., entered a plea of nolo contendere in the U. S. District Court at Ada to a violation of the Harrison Narcotic Law; on October 10 he received a suspended sentence of three years in the penitentiary and was placed on probation for a similar period; he was also fined $500.

Dr. Glenn F. Treadwell, Friendship, Wis., pleaded nolo contendere in the U. S. District Court at Wausau to the Harrison Narcotic Law and also to the unlawful sending of poison through the mail. On May 15 he was sentenced to pay a fine of $750.

Dr. Donald A. Cowan, Sault Ste. Marie, Mich., pleaded guilty in the U. S. District Court at Detroit to violations of the Harrison Narcotic Law; on April 24 he received a suspended sentence of two years in the penitentiary and was placed on probation for a period of four years.

Dr. Robert G. McMurray, Marion, Ohio, pleaded guilty to the violation of the Federal Narcotic Law, September 11, and was sentenced to a term of three years in the U. S. Public Health Service Hospital, Lexington, Ky.

Dr. Thomas S. Carter, Miami, Fla., pleaded guilty in the U. S. District Court at Tampa to violation of the federal narcotic law and on September 6 was sentenced to a term of two and one-half years.

Dr. Claude E. Shoemaker, Chicago, pleaded nolo contendere in the U. S. District Court in Chicago to violation of the federal narcotic law and on September 25 was sentenced to a term of five years, which was suspended and he was placed on probation for a period of five years.

Dr. Charles L. Johnson, Kenton, Ohio, pleaded guilty in the U. S. District Court at Toledo, Ohio, to violation of the federal narcotic law and on September 18 was fined $1,000 and was placed on probation for a period of five years.

Dr. Ernest M. McKenzie, Hollywood Road, Hot Springs, Ark., pleaded guilty in the U. S. District Court in Arkansas to a narcotic violation, and on September 20 sentence was suspended and he was placed on probation for a period of two years.

Dr. Augustus D. Harper, Crossville, Ill., pleaded guilty in the U. S. District Court at East St. Louis, Ill., to violation of the federal narcotic law and on September 9 was fined $200 and placed on probation for a period of two years.

Research in Heart Diseases.—Eleven additional fellowships and three more grants-in-aid to medical institutions for research in diseases of the heart and of the arteries were announced September 25 by the Life Insurance Medical Research Fund, New York. The additional awards bring this year's allocation of research funds to nearly $700,000. Organized a year ago, the Life Insurance Medical Research Fund is supported by 149 legal reserve life insurance companies in the United States and Canada (THE JOURNAL, May 4, p. 52). All research sponsored by the fund is devoted at present to the cardiovascular diseases. Applications for research fellowships for 1947 will close on Jan. 1, 1947 and for grants-in-aid on Jan. 31, 1947. Fellowships range from $1,500 to $2,000 a year for junior fellows and from $2,500 to $3,500 for seniors. New recipients are Harwell G. Davis II, LL.D., Medical College of Alabama, Birmingham; Dr. Charles V. E. Dowling, New York, at Western Reserve University, Cleveland; Dr. Jerome Gross, New York, at Massachusetts Institute of Technology; Dr. Harper K. Hellems, Lewisburg, W. Va., Peter Bent Brigham Hospital; Dr. Jack L. Lewis, Los Angeles, Stanford University; Dr. Harold Mankin, Columbia University College of Physicians and Surgeons; Dr. George E. Murphy, Kansas City, Mo., Rockefeller Institute for Medical Research, and Dr. Hugh Grant Skinner, New Toronto, Ont., Canada, University of Toronto. Three junior fellowships to students who have not yet completed their work for degrees in medicine or the medical sciences include Thomas C. Hall, Boston, to work at Harvard Medical School, Boston; Miss Marie Louise Nieft, Chicago, to work at the University of Southern California School of Medicine, Los Angeles, and Murray Saffran, Montreal, Quebec, to work at McGill University. Grants-in-aid were awarded to the Carnegie Institution of Washington, D. C., for support of research into the embryology of the veins of the brain under the supervision of Dr. George W. Corner; to McGill University for support of research toward the development of procedures for heart surgery under the supervision of Dr. David W. MacKenzie, and to New York University for support of research toward designing an extremely delicate sensitive apparatus for measuring the blood pressure in the heart under the supervision of Dr. Homer W. Smith. The fellowship awards bring the total number given by the fund in the first year of its operation to twenty, representing $55,800. The twenty fellows come from eleven states and two Canadian provinces and will engage in medical research at seventeen different institutions. Total funds expended for grants-in-aid amount to $633,591, for a total of fifty-five research projects.

PHILIPPINE ISLANDS

Medical Meetings Resumed.—In an editorial comment the *Journal* of the Philippine Medical Association discusses the thiry-ninth meeting of the association, held May 7-11. The thirty-eighth annual meeting was held in April 1941. The editorial said that to ward off the obnoxious influences of the enemy and the possibility that the medical profession in this country might be used toward ends inimical to the interests of its inhabitants, the Philippine Medical Association suspended all its activities for the duration. One feature of the recent meeting was the awarding posthumously for the first time in the history of the association of a gold medal and a citation to Dr. Candido M. Africa, an innocent victim of the Japanese atrocities, for his contributions to medical science. The house of delegates formulated a program for the rehabilitation of the association and its component societies in order that they may resume all their former activities; it adopted a resolution thanking the American Medical Association for its readiness to help in the rehabilitation of the Philippine Medical Association and in the rebuilding of the medical library destroyed during the war; it approved the Principles of Medical Ethics of the Medical Profession in the Philippines and authorized the council to seek the approval of the secretary of health and public welfare that these may be adopted officially by the board of medical examiners; and it expressed readiness in taking its share of the burden of rehabilitating the devastated country. Dr. Januario Estrada was elected president. He was president of the Manila Medical Society and the Colegio Medico-Farmaceutico de Filipinas from 1941 until 1945. He has been twice vice president of the Philippine Medical Association. Other officers include Drs. Juan Z. Santa Cruz and Gonzalo Santos, vice presidents, and Dr. Antonio S. Fernando, secretary-treasurer.

Marriages

JOSEPH S. THOMAS JR., Flushing, N. Y., to Miss Olive St. Marie at Keene, N. H., September 12.

JAMES OSCAR HALE JR., Erwin, Tenn., to Miss Emily Ruth Borden of Greeneville, September 15.

CHARLES THORNTON COWART, Donalsonville, Ga., to Miss P. Eileen Holton of Atlanta recently.

L. FREELAND MAGRUDER, Portsmouth, Va., to Miss Hattie Cridlin Taylor of Urbanna, July 29.

THOMAS MARION DAVIS, Columbia, S. C., to Miss Adelle Davis in Savannah, Ga., August 31.

ROY L. ROBERTSON, Shreveport, La., to Miss Gloria Anne Nobles of Gibsland, June 1.

EDWIN H. WILLMARTH to Miss Cecelia Dougherty, both of New Castle, Pa., July 3.

Deaths

Norval Harvey Pierce ✠ Del Mar, Calif.; College of Physicians and Surgeons of Chicago, 1885; born in Washington, D. C., May 13, 1863; professor of laryngology, rhinology and otology emeritus at his alma mater, now known as the University of Illinois College of Medicine, where in 1915 he was appointed professor and head of the department; formerly professor of otology at the Chicago Polyclinic and the Chicago Post-Graduate School; specialist certified by the American Board of Otolaryngology; member of the Illinois State Medical Society, National Institute of Social Sciences, Chicago Historical Society and the Chicago Society of Medical History; chairman of the research committee on otosclerosis, Chicago Medico-Legal Society; fellow of the American College of Surgeons, Chicago Academy of Medicine and the Institute of Medicine of Chicago; member and past president of the American Laryngological Society, American Laryngological, Rhinological and Otological Society, American Otological Society and the Chicago Laryngological and Otological Society; surgeon in the U. S. Navy during the Spanish-American War; a major in the medical corps of the U. S. Army during World War I, serving at Camp Grant and as chief otolaryngology surgeon at the U. S. Army base hospital in Vichy, France; decorated with military honors for his work in plastic surgery; served on the staffs of the Illinois Eye and Ear Infirmary and St. Luke's Hospital in Chicago; died October 28, aged 83.

Henry Ewing Hale, Princeton, N. J.; Columbia University College of Physicians and Surgeons, New York, 1896; at one time on the faculty of his alma mater; formerly affiliated with the Vanderbilt Clinic and the Babies Hospital and attending physician at Bellevue Hospital in New York City, where for many years he served on the board of education; founder and an officer of the Princeton Historical Society; served on the Princeton township board of education; chairman of the New York Medical Advisory board in connection with Selective Service during World War I; died November 5, aged 77, of injuries received in an automobile accident.

Wilfred Anthony Rose, San Francisco; Tufts College Medical School, Boston, 1930; member of the American Medical Association and the Massachusetts Medical Society; interned at St. Luke's Hospital in Jacksonville, Fla., and the Wheeling Hospital in Wheeling, W. Va.; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve on Oct. 12, 1942; for fifteen months medical officer with a naval repair unit in the Pacific; released from active duty on Jan. 1, 1946; died September 24, aged 41, of coronary thrombosis.

Eva Colt Bagley, Sioux City, Iowa; Michigan College of Medicine and Surgery, Detroit, 1895; died September 25, aged 81, of carcinoma of the bladder.

Marshall Henry Bailey, Norwell, Mass.; College of Physicians and Surgeons, Baltimore, 1893; member of the American Medical Association; at one time medical adviser to the students of Harvard University in Cambridge; died September 18, aged 87.

Franklin Wetmore Blye, Chicago; University of Illinois College of Medicine, Chicago, 1926; member of the American Medical Association; served during World War I; died September 28, aged 48, of coronary thrombosis.

Henry Weston Brody, New York; Long Island College Hospital, Brooklyn, 1905; member of the American Medical Association; chief of the medical staff of the Greater New York Taxpayers Mutual Insurance Association; formerly on the staffs of the Gouverneur and Good Samaritan hospitals; died September 20, aged 66.

William Burke, Greenwich, Conn.; Long Island College Hospital, Brooklyn, 1896; on the staff of the Greenwich Hospital, where he died October 1, aged 76, of chronic nephritis.

Toussaint C. Cabana, Attleboro, Mass.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1894; died August 15, aged 77, of mitral insufficiency.

Thomas William Cail, Newton, Mass.; College of Physicians and Surgeons, Boston, 1910; died July 29, aged 60, of carcinoma of the stomach.

Edwin Morey Chase, King City, Calif.; University of Southern California School of Medicine, Los Angeles, 1934; interned at Santa Fe Coast Lines Hospital in Los Angeles; served a residency at the Kern General Hospital in Bakersfield and on the staff of the Ventura County Hospital in Ventura; died in the Santa Clara County Hospital in San Jose, September 16, aged 43.

Eric Knox Collier ✠ Tipton, Okla.; Tulane University of Louisiana School of Medicine, New Orleans, 1926; died in Norman August 9, aged 43.

Edward Martin Crane, Hardwick, Vt.; University of Vermont College of Medicine, Burlington, 1895; served during World War I; on the staff of the Hardwick Hospital; for many years chairman of the local school board; died in the Mary Fletcher Hospital, Burlington, September 4, aged 78.

Charles Herbert Dockstader ✠ Massapequa, N. Y.; Bellevue Hospital Medical College, New York, 1891; an Affiliate Fellow of the American Medical Association; died August 19, aged 80, of chronic endocarditis.

Robert Rockwell Felter, Pearl River, N. Y.; University of the City of New York Medical Department, New York, 1894; member of the American Medical Association; served as president of the First National Bank and the board of education in Pearl River; died October 3, aged 89.

John Joseph Gossner, Fabius, N. Y.; Syracuse University College of Medicine, 1916; member of the American Medical Association; served as health officer for the past twenty-four years in charge of the consolidated health district of Fabius; school physician; member of the staff of the Crouse-Irving Hospital in Syracuse, where he died August 26, aged 55, of acute appendicitis with perforation.

James W. Grubbs, Bowling Green, Ky.; Kentucky School of Medicine, Louisville, 1893; died September 18, aged 83.

Isaac W. Hooper, Norman, Okla.; Baylor University College of Medicine, Dallas, 1904; died in the Municipal Hospital August 25, aged 79.

Walter William Hotchkiss, Jamestown, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1888; died August 17, aged 80, of carcinoma of the liver.

Frederic Clarke Jewett, Baltimore; Baltimore University School of Medicine, 1893; at one time professor of diseases of the nose and throat at his alma mater; died June 15, aged 78.

Howard Kahn, Baltimore; University of Maryland School of Medicine, Baltimore, 1900; at one time on the faculty of nis alma mater; member of the American Medical Association; died in the Maryland General Hospital September 24, aged 68.

Edward John Kirwan, Ludington, Mich.; Rush Medical College, Chicago, 1897; on the staff of the Paulina Stearns Hospital; died September 19, aged 76, of cerebral hemorrhage.

Assadour Hagop Kludjian, Lowell, Mass.; Baltimore Medical College, 1894; died August 5, aged 77, of arteriosclerosis.

John Anthony Kropacek, Chicago; the Hahnemann Medical College and Hospital, Chicago, 1912; member of the American Medical Association; formerly a member of the board of health in Cicero; died in the West Suburban Hospital, Oak Park, September 29, aged 58, of bronchopneumonia.

John Conrad Kunz, Cincinnati; Cincinnati College of Medicine and Surgery, 1891; member of the American Medical Association; on the staff of the Bethesda Hospital; died in the Christ Hospital September 18, aged 81, of aplastic anemia.

Margaret Rebekah Large, Lansdowne, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1909; died September 11, aged 70, of cerebral hemorrhage.

Michael Joseph Lawlor ✠ Waterbury, Conn.; Columbia University College of Physicians and Surgeons, New York, 1906; for many years on the staff of St. Mary's Hospital; consulting surgeon at Hungerford Hospital in Torrington; died in a hospital at New London, N. H., September 16, aged 64, of ruptured abdominal aorta.

J. Joseph Link, St. Louis; Chicago Medical College, 1890; at one time on the staff of the City Hospital; died in St. Anthony Hospital July 31, aged 83, of carcinoma of the prostate.

Samuel Thomas B. McCabe ✠ Johnsonburg, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1917; member of the staff of the Andrew Kaul Memorial Hospital, St. Marys; died in the Robert Packer Hospital, Sayre, September 10, aged 55, of dissecting aneurysm of the aorta.

John Denis McGowan, Sama Monica, Calif.; Harvard Medical School, Boston, 1885; fellow of the American College of Surgeons; at one time practiced in Chicago, where he was chief surgeon for the Commonwealth Edison Company; died September 10, aged 93.

Claude Worth McKee ✦ Greensburg, Pa.; Rush Medical College, Chicago, 1897; served during World War I; member of the American Academy of Ophthalmology and Otolaryngology; for many years chairman of the advisory board of the Salvation Army; on the staff of the Westmoreland Hospital; died September 11, aged 70, of arteriosclerotic heart disease.

Bert Edward Mankopf ✦ Washington, Mo.; Marion-Sims College of Medicine, St. Louis, 1897; served during World War I; captain, medical reserve corps, U. S. Army, not on active duty; died August 25, aged 72, of heart disease.

Oliver William Means Jr., Hartford, Conn.; Columbia University College of Physicians and Surgeons, New York, 1946; intern at the Hartford Hospital; died September 10, aged 31, of anterior poliomyelitis of the bulbar type.

John Burr Miller, San Antonio, Texas; Starling-Ohio Medical College, Columbus, 1910; member of the American Medical Association; formerly local physician and surgeon for the San Antonio and Aransas Pass Railroad; died June 11, aged 70, of brain tumor.

Edward Brent Mitchell, Lawton, Okla.; University of Louisville (Ky.) Medical Department, 1893; for many years affiliated with the Indian Service, serving as physician in charge of the eye, ear, nose and throat department of the Kiowa Indian Hospital; draft examiner during World War I; recently received recognition for his "faithful and loyal service" during World War II in the form of a selective service medal; for many years president of the Home Building and Loan Association; died August 13, aged 78.

Sheldon Alexander Morris, Jacksonville, Fla.; Medical Department of Tulane University of Louisiana, New Orleans, 1888; member of the American Medical Association; past president of the Duval County Medical Society; co-founder and president of the De Soto Sanatorium, now known as St. Vincent's Hospital; died September 12, aged 81, of bronchopneumonia.

William A. Moser, Grants Pass, Ore.; Medical College of Indiana, Indianapolis, 1903; died in August, aged 76.

Harry Clarke Moses, Prattsburg, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1908; served during World War I; killed August 30, aged 68, in an automobile accident.

Raymond William Paul ✦ Richmond, Va.; Medical College of Virginia, Richmond, 1918; on the staffs of the Retreat for the Sick and the Stuart Circle Hospital; died in a local hospital September 22, aged 53, of hypertensive cardiorenal disease.

Harold Vincent Phelan ✦ Cleveland; Georgetown University School of Medicine, Washington, D. C., 1921; specialist certified by the American Board of Ophthalmology; on the staff of St. Alexis Hospital; died in Shaker Heights September 1, aged 51, of coronary thrombosis.

Clarence Leighton Poley ✦ The Dalles, Ore.; Northwestern University Medical School, Chicago, 1908; county health officer; on the staff of The Dalles Hospital, where he died August 8, aged 67, of cerebral hemorrhage.

Charles Marius Pomerat, Springfield, Mass.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, Que., Canada, 1894; died in the Brattleboro Retreat, Brattleboro, Vt., September 17, aged 83, of bronchopneumonia and cerebral arteriosclerosis.

Alfred Joseph Radgens, Detroit; Detroit College of Medicine, 1903, died in the Mount Carmel Mercy Hospital September 9, aged 67, of coronary thrombosis.

Charles Edward Ralph, Lansdowne, Pa.; George Washington University School of Medicine, Washington, D. C., 1915; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; formerly affiliated with the Veterans Administration; died September 12, aged 73.

Robert A. Range, Elizabethton, Tenn.; Kentucky School of Medicine, Louisville, 1898; died August 30, aged 72, of cerebral hemorrhage.

John Franklin Reeves ✦ Bridgeton, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1911; member of the executive committee and past president of the Cumberland County Medical Society; served during World War I and on the examining board of the Selective Service during World War II; at one time served on the board of education; on the staff of the Bridgeton Hospital; died September 18, aged 60, of coronary thrombosis.

Daniel Edward Remsberg ✦ Roanoke, Va.; University of Maryland School of Medicine, Baltimore, 1905; medical director of the Norfolk and Western Railway; died September 14, aged 72, of coronary occlusion.

Carl Martin Roan ✦ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1908; fellow of the American College of Surgeons; served during World War I and as deputy coroner of Hennepin County; on the staff of the Deaconess Hospital; died September 11, aged 68.

Harry Lewis Rothblatt, Boston; Baltimore Medical College, 1908; died March 2, aged 61, of coronary thrombosis.

Joseph Napoleon Roy ✦ Webster, Mass.; Baltimore University School of Medicine, 1902; died March 19, aged 74, of myocardial failure.

Philip Melbourne Schell, New York; Syracuse University College of Medicine, 1938; served an internship at the Hospital of the Good Shepherd in Syracuse and the Syracuse Memorial Hospital; a first lieutenant in the medical corps, Army of the United States, during World War II; died in the Columbus Hospital Sept. 17, 1945, aged 31.

Louis P. Schroeder, Addieville, Ill.; Hospital College of Medicine, Louisville, 1892; died September 13, aged 79.

J. Campbell Smith, Pasadena, Calif.; University of Maryland School of Medicine, Baltimore, 1885; member of the American Medical Association and the Missouri State Medical Association; formerly on the staffs of St. Luke's Hospital, St. Louis Skin and Cancer Hospital and the Evangelical Deaconess Hospital, all in St. Louis; died September 18, aged 86.

John De Forest Smith, Dayton, Ohio; Eclectic Medical Institute, Cincinnati, 1898; on the staff of the Miami Valley Hospital; died September 22, aged 74, of generalized lymphosarcoma.

John Hudson Storer, New York; New York Homeopathic Medical College and Hospital, New York, 1891; member of the American Medical Association; affiliated with the Community Hospital, where he died September 9, aged 80.

Ernest A. Spicker, Adams, Mass.; Albertus-Universität Medizinische Fakultät, Königsberg, Prussia, 1924; died March 27, aged 46, of trichinosis.

Charles Jewett Watson, Thomaston, Maine; Medical School of Maine, Portland, 1898; died in Dartmouth, Mass., June 30, of coronary thrombosis.

PUBLIC HEALTH SERVICE

Leslie Leon Lumsden ✦ medical director, U. S. Public Health Service, retired, New Orleans; born in Granite Springs, Va., June 14, 1875; University of Virginia Department of Medicine, Charlottesville, 1894; did graduate work at Johns Hopkins University, Baltimore, 1894-1895; commissioned assistant surgeon in the U. S. Public Health Service in 1898; and assigned to New Orleans to assist in handling yellow fever epidemics; credited with being one of the first to suggest that yellow fever was transmitted by insects; served in California during the first outbreak of bubonic plague reported in the United States at the turn of the century, then was assigned to the Hygienic Laboratory, Washington, D. C., now the National Institute of Health, because of the prevalence of typhoid in the District of Columbia; continued his investigations of typhoid in many parts of the country; at Yakima, Wash., organized the first full time county health department in the United States; made house to house sanitary surveys in eighteen counties of sixteen states; became a passed assistant surgeon in 1903, surgeon in 1912, senior surgeon in 1928 and became medical director in 1930, serving until 1939, when he retired; member of the American Public Health Service; district director and research worker in New Orleans from 1931 to 1939; associated with the Tennessee Department of Public Health from 1939 to 1941; since 1943 lecturer in epidemiology at the University of Texas Medical Branch in Galveston; during World War I was assistant surgeon general in the U. S. Public Health Service; author of various U. S. Public Health Service publications on typhoid, rural sanitation, rural health work, tuberculosis and poliomyelitis; died in the U. S. Marine Hospital November 8, aged 71, of leukemia and pneumonia.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 2, 1946.

The Morale of the Soldier

At the Royal Society of Medicine was witnessed the unusual occurrence of a lecture on a medical subject by Field Marshal Montgomery, who delivered the Lloyd Roberts lecture, on the morale of the soldier. High morale, he said, was a quality without which no war could be won, and it should interest the medical profession because it was a mental product. As a citizen he would reflect the national character, which was therefore of great importance, and anything that weakened this weakened the army. In war the moral stature of some men would increase. Others, under the stress of battle, surrendered to fear and to fatigue and allowed their characters to disintegrate. Morale was a mental quality which maintains human dignity and develops latent heroism. High morale drew a man forward against his own desires. It is not toughness, though tough men may occasionally perform high acts of bravery. Four basic factors are essential to high morale: leadership, discipline, comradeship and self respect. Good morale is impossible without good leaders; all men are frightened at some time or other to a greater or less extent, and in fear men band together and look for guidance. At such moments they are not capable of standing alone: they find the burden too great. The leader accepts the burdens of others and earns their gratitude thereby and the right to lead them. The quality men recognize in their leader is decision. Fear makes a man sluggish and indecisive. The leader's power over his men is based on his ability to cut through that fear paralysis and to help others to escape from it. His greatest asset is his ability to act normally in abnormal circumstances and to think rationally when his men have ceased to think.

The object of discipline is the conquest of fear. The basis of fear is the awareness of danger, which comes when a man thinks that he is opposed by something more powerful than himself. Discipline helps him to lose his own identity and create a corporate sense. It also implies a conception of duty; but Montgomery thought that this did not embrace abstractions such as freedom, democracy, empire. A man's sense of duty extended to the friends around him.

This brought Montgomery to his third factor, comradeship. Morale cannot be good unless men come to have affection for one another. Comradeship is the great antidote to fear. Self respect, his fourth factor, develops if the other three are present. A powerful contributory factor to morale is success; it is not possible to maintain morale during a long period of defeat.

Finally the field marshal returned to his theme that the soldier is first of all a citizen. Nothing weakened a man more than trouble at home. The soldier had to have good living conditions and always good food, but there is a danger of considering welfare as an end. It will never produce high morale by itself because it is essentially soft. Hardness and privation are the school of a good soldier, idleness and luxury his enemies. It was not for nothing that one of the great rallying calls of the British had been the cry "Blood, toil, tears and sweat."

Research on Rheumatism

As far back as 1922 the Ministry of Health conducted a sample survey of insured workers to determine the incidence of the complaints commonly called rheumatism. It was found that these were responsible for a sixth of the cost of illness, and later a higher estimate was made. In 1945 the Medical Advisory Committee of the Ministry of Health recommended that diagnostic and research centers should be established for the study of chronic rheumatism and improvement in diagnosis and treatment. These centers were to be located in university medical schools and teaching hospitals. The Nuffield Foundation has made a grant of $400,000 spread over ten years toward establishing a center at the University of Manchester. This will be in the teaching hospital of the university, the Royal Infirmary, and will deal with short-stay inpatients and outpatients, who will be referred from outlying clinics in the region. For long-stay inpatients there will be a clinic at a base hospital near the center and a second base hospital in the country. At the base hospitals lengthy investigations will be carried out and problems of rehabilitation studied. The scheme will insure access to a large number of cases, especially in the early stages, which are considered requisite for a successful attack on the causation, diagnosis and treatment. At the center the work will cover two main fields: the clinical, sociologic and industrial aspects of the disease, and the fundamental study of the disease by pathologic, bacteriologic and biochemical methods. The clinical study will be under the direction of a physician who will have the cooperation of the orthopedic, physical therapy and dental departments of the university. The social aspects of the disease will be studied in cooperation with the University Department of Industrial Health. Pathologic conditions of bones and joints will be investigated under the direction of a pathologist expert in the subject. An important object is the diffusion throughout the health services of the area of knowledge gained at the university center and the bringing of physicians in the outlying area into closer relation with the medical school.

Revision of the International List of the Causes of Death

The registrar general of births, deaths and marriages announces that in connection with the revision in 1948 of the International List of Causes of Death the minister of health has appointed an advisory committee to consider from a medical point of view and to advise on the alterations to be suggested by the government. A number of physicians have been appointed to the advisory committee, including Dr. A. Bradford Hill, professor of medical statistics, London University, and Dr. Percy Stocks, medical statistician of the General Register Office. Recognition of the importance to medical research of internationally comparable statistics of causes of death inspired the formulation of the present classification, which was adopted by the International Institute of Statistics in 1893 and which has been revised on five occasions by an international conference convened decennially since 1900 by the French government. The main achievements of the conference have been the revision of the International List of the Causes of Death in accordance with scientific advances and initiation of the agreement relating to statistics of the causes of death signed in 1934 on behalf of twenty governments, which undertook to compile and publish their statistics according to the agreed International List. Provision has now been made for the next revision in 1948 and the establishment of an international nomenclature of diseases to be carried out under the auspices of the World Health Organization.

A National Radium Center

The government has decided to establish a national center for the processing and distribution of radium, radon and artificial radioactive substances required for scientific, medical and industrial purposes. The center will be operated by a private company, Thorium Limited, acting as agents for the Ministry of Supply. As a first step the ministry will purchase the radiochemical business owned by Thorium Limited, excepting the manufacture of luminous compounds and other secondary industrial products. The extraction of radon, which was carried on during the war under the supervision of the Medical Research Council, will be transferred to the new center. The work there will be closely coordinated with the ministry's activities in the field of atomic energy. It will be controlled by a council which will include representatives of the ministry, of the managing agent and of users of its products.

PARIS

(From Our Regular Correspondent)

Oct. 31, 1946.

Centenary of the Academy of Surgery

On Aug. 25, 1843 seventeen young surgeons of the Paris hospitals, under the presidency of Auguste Berard, created the Society of Surgery, which became later on the Academy of Surgery of France. The centenary of the academy, postponed in 1943 on account of the Nazi occupation, was celebrated on the 9th of October under the presidency of Professor Basset at the Paris Town Hall. Dr. Louis Bazy outlined the history of this society of scientists. Among the representatives of foreign societies of surgery who brought messages were Dr. Mayer, representing the International Society of Surgery, Professor Petitclerc from Canada, Professor Whipple from the United States, Sir Max Page of the Royal College of Surgeons, Mr. James Graham, Professor Learmonth from England, Professor Gruca from Poland, Professor Girasek from Czechoslovakia and Professor Bengolea from Argentina. On behalf of the Paris municipality, Dr. P. Rouques drew up a plan for the reform of the Paris hospital system: reconstruction and enlargement of hospitals, one emergency center with powerful means of action, a corps of anesthetists, a special school for surgeons, institution of better living conditions and old age insurance for doctors.

Kinodensigraphy, a Method for Registering Invisible Pulsation of the Pulmonary Parenchyma

At a meeting of the Society of the Paris Hospitals, Professor Kourilsky presented a new method of exploration of a physiopathologic field, yet unpublished, evolved by Maurice Marchal for registering radiologic variations up to now invisible. The patient has the x-ray bulb at the back; a special radioelectric cell is placed at a distance from the thoracic wall. The x-ray beam is strongly diaphragmed, so that only a split beam of light can pass through it. By this method and by employing simultaneously several radioelectric cells, the measuring of the rapidity of circulation in a pulmonary arteriole, as well as the duration of the passage of the blood from the arterial level to the venous level of the lung, is possible. Kinodensigraphy can be used for diagnosis and for therapeutic control in all pulmonary diseases as well as in those of the heart and the blood vessels.

A New Medical Review

A new international review of psychoanalysis and of human sciences has been issued under the title of *Psyché*. It is published under the patronage of Prince Louis de Broglie, perpetual secretary to the Academy of Science, of Dr. Toulouse, president of the Mental Hygiene League, and of other personalities of the medical world; the director is Maxim Clouzet. In the first issue, among other contributions, are to be found articles by Dr. René Laforgue on psychoanalytic sociology, Dr. Gisèle Galy on twenty-five years of French medical hygiene and Dr. Juliette Boutonier on the crisis of adolescence.

Miscellaneous

The Academy of Surgery has commemorated the death of Dr. Howard Lilienthal of New York, a foreign associate member. During the first world war he conducted in France a specialized unit organized by the Mount Sinai Hospital. The academy has also commemorated the death of Professor P. N. Hansen of Copenhagen, a foreign associate member.

Professor Louis Bugnard, professor of biology at the Toulouse Faculty of Medicine, has been appointed director of the National Institute of Hygiene in the place of Professor A. Chevallier, retired.

The first chairmanships of labor medicine have been created at the Faculties of Paris, Lyons and Lille.

ITALY

(From Our Regular Correspondent)

NAPLES, Oct. 1, 1946.

The Price of Drugs

During the last few months the Italian market has become seriously overloaded with American drugs. Large quantities of hormones, vitamins and tonics have been mailed from relatives in the United States to some people here in order to make a profitable business. All these drugs remain now unsold in the private homes of these people. They are far too expensive; furthermore, there is an abundance of Italian drugs. The only well known American drugs for which substitutes are not available at present are folic acid, penicillin and streptomycin. Folic acid costs 200 lire per tablet. Two hundred thousand units of penicillin may be obtained for 1,500 lire (six months ago the price was 8,000 lire). The price of streptomycin is 25,000 lire per gram. French and Swiss firms which have their own branches in northern Italy are now competing with the expensive American drugs by selling their products for the same price as the Italian drugs.

Meeting of Radiologists

At a convention held September 21-23 the radiologists of Italy were encouraged to learn of the fluoroscopic station in New York, where in the course of a few days chest examinations of three million of the population were carried out for diagnostic purposes. A fluoroscopic station, not exactly like New York's but modern and very active, is that of Milan, where it is reported that latent tuberculosis was found in 2 to 3 per cent of 100,000 persons examined in a few days; this is considered a very low percentage. Vice versa, 50 per cent of latent forms were demonstrated on fluoroscopy in the antiaircraft corps, where in wartime there was an influx of all those who had been rejected from the army and from the navy for physical deficiency. Among other subjects discussed at this meeting were angina, melanoblastoma, carcinoma, lupus and tomographic studies of tumors of the lungs and of dense para-aortic shadows. The chairman was Professor Vallenbona, who is considered in Italy to be the inventor of the tomographic method.

BELGIUM

(From Our Regular Correspondent)

Sept. 27, 1946.

Medical Supervision of Schools in the Congo

A plan is taking shape which is truly beneficial from the point of view both of hygiene in general and particularly of the health of our colonial pupils. From now on all the educational establishments of the Belgian Congo and of its annexed territories of Ruanda-Urundi are to be subject to regular medical inspection. This service is assigned to the physicians of the government and to those who are approved by the governor of each province or by the governor of Ruanda-Urundi. In the schools for Europeans the students are examined at the beginning of the school term. Those whose state of health requires special supervision or who are especially designated by the master of the school or by other members of the teaching staff are reexamined by the medical inspector. The premises likewise are the object of annual inspection. The doctors in charge of these investigations have the right to order measures to be taken if contagious diseases arise. They must make sure that a medical record is kept of each student, they are to exercise medical control over sports, and in the boarding houses and boarding schools they are to supervise the diet. In the schools for the natives, the medical inspectors likewise proceed with the annual examination not only of the pupils but also of the buildings, annexes and furnishings. The keeping of the medical record cards for each individual must be a rule in large groups. The diet and sports likewise should not escape medical inspection.

Correspondence

"THE HELPING HAND," BY EMILE RENOUF

To the Editor:—It is rather out of the ordinary to have editorial comment on an advertisement in THE JOURNAL, but Mead Johnson and Company in their advertisement in the issue of October 5 reproduced a picture that to my mind is out of the ordinary. Since 1902, when at the age of 10 years I began to be a frequent visitor to the Corcoran Art Gallery in Washington, I have been very fond of a painting called The Helping Hand, by Emile Renouf, painted in 1881. Renouf, the centennial of whose birth was June 23, 1945, spent his life in his native Honfleur, across the river from Havre, and the grandfather and grand-daughter in this picture are fishing folk of that region. The painting has its own story to tell. What I should like to call to the attention of any who may enjoy this excellent print is that the Corcoran Gallery's having the painting in the first place is a monument to the integrity of George Ingraham Seney, a Brooklyn banker whose name is linked with the Methodist Hospital of Brooklyn, of which he was a heavy benefactor. Part of the story is told in Appleton's Dictionary of American Biography. He got into financial straits over some railroad financing in the early eighties which went bad, and to protect the depositors in his bank against loss he put up his mansion and his art collection at auction. The latter, with a book value of $500,000, brought a little more than $400,000 at a forced sale. The Corcoran Gallery bought Renouf's painting at this sale for $7,000. With the money realized from the sale of the house and the pictures, Seney paid off his depositors in full. The Helping Hand has brought pleasure to innumerable visitors to the Corcoran Gallery who do not have knowledge of the story back of it. It adds to my enjoyment of it to know that a man who valued his integrity above money owned it and parted with it. It seems opportune in an opportunist age to make this bit of history available to the public.

RAMSAY SPILLMAN, M.D., New York.

ENURESIS

To the Editor:—I have read with considerable interest the article on "Enuresis, a Psychologic Problem of Childhood," by Dr. Clifford Sweet in THE JOURNAL, October 5. I am in agreement with Dr. Sweet's concept of the condition and with his recommendations for treatment. The treatment he recommends includes (1) examinations for organic disease or defect and their correction, if any are found (such defects are probably present in only a small percentage of cases of enuresis) and (2) psychotherapy, which, as stated by Dr. Sweet, consists in "reeducation of the parents and the child rather than the use of any drug, change in diet or fluid intake or any surgical instrument."

There is, however, a specific form of psychotherapy which I should like to recommend. It should probably be referred to as a psychoneuromuscular exercise. It is very simple and succeeds only in the case of children who are old enough to cooperate. This includes all who are over 6 years of age and even some who are younger.

The child is instructed to stop and start the flow of urine two or three times during each daytime micturition. This procedure exercises the psychoneuromuscular mechanism as a whole and helps to establish the dominance of the higher psychic centers over the purely reflex neuromuscular mechanism. The cerebral dominance which is established soon carries over into the unconscious period of sleep. In the case of small children, it is well for one of the parents to stand by during daytime micturition and coach the child in the exercise of starting and stopping the flow.

As a full time pathologist I have not had the opportunity to recommend this exercise directly to patients. However, I know of several cures obtained by physicians who at one time or another have consulted me regarding their enuresis problems. Many children will be cured in one to three weeks' time by the faithful performance of the exercise recommended. One woman about 20 years of age had postponed her marriage several times because of enuresis. She rapidly cured herself by the foregoing psychoneurosphincter exercise.

I have wanted to report this simple treatment for several years but have hesitated to do so because I have not collected documented case histories.

EDWIN E. ZIEGLER, M.D., Lancaster, Pa.

AFTER-CARE OF CORNEAL FOREIGN BODIES

To the Editor:—In the New York Navy Yard, where 70,000 civilians were employed, 52,704 injuries were reported in 1944. Of these, 11,380, or 21 per cent, were accidents to the eye, predominantly caused by the presence of foreign bodies.

While the foreign bodies in the conjunctiva were readily removed without loss of time on the part of the employees, those in the cornea, particularly the metallic bodies with a circumscribed rust ring, were not as easily taken out and usually gave rise to absenteeism. These lost man hours were due chiefly to the fact that the eye was covered after removal of the particle, with a consequent loss of binocular vision. As this incurred an added hazard to an already hazardous job, the patients frequently were permitted to go home or were transferred temporarily to an unskilled nonhazardous position. Ocular pain, too, was a definite contributing cause of time lost.

Following the removal of an embedded foreign body in the cornea, it is unnecessary to put a patch over the eye even in an atmosphere where foreign bodies abound. This observation is based on the treatment of several hundred cases. No apparent retardation of healing was noted in comparing a group of this type with an identical series of patients whose eyes were occluded.

At the Navy Yard, after an embedded corneal foreign body was removed, a small amount of ocular anesthetic ointment, butyn sulfate 2 per cent, was placed in the lower cul-de-sac, and the eye was left uncovered to preserve binocular vision. A systemic anodyne, such as 15 grains (1 Gm.) of acetylsalicylic acid, was given orally. In order for the patient to continue his work in comfort, the local application was repeated at least once or twice during his working hours. For this purpose he was supplied with a limited amount of the analgesic, the commercial tube of ⅛ ounce of ointment being an excessive quantity. A gelatin capsule of O size, holding one sixth of the contents in the tube, provided an ample amount to insure the patient against discomfort for the ensuing twelve hours. Such a capsule proved satisfactory and contained sufficient salve for four treatments. Each patient was also given another 15 grains of acetylsalicylic acid, which he was instructed to take for the prevention of subsequent pain.

Considering the many establishments where conservation of working time is desirable, this plan of treatment recommends itself since it affords adequate therapy, reasonably administered, and is consistent with good results.

ARTHUR A. KNAPP, M.D., New York.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Charitable Hospitals: Liability for Negligence of Nurse and Intern in Giving Blood Transfusion to Wrong Person.—The plaintiff sued for damages for personal injuries resulting from the alleged negligence of the defendant in the administration of its hospital. From a judgment for the plaintiff the defendant appealed to the supreme court, appellate division, fourth department, New York.

The plaintiff entered the defendant's hospital on advice of her physician and was assigned as a paying patient to a private room. After undergoing an operation she recovered to the point where it was anticipated by her and her physician that she would leave the hospital forty-eight hours later. Prior to her leaving, an intern and a nurse entered her room and informed her that she was to have a blood transfusion. The plaintiff asked who the donor was to be and, on being informed by the nurse that it was to be her daughter, the plaintiff replied "I haven't got a daughter." The nurse and intern, however, went ahead and started the transfusion. During its course the plaintiff had a chill and a rising temperature and the transfusion was stopped and her physician summoned. The plaintiff suffered severe headaches and in later days became mentally ill and spent some time in a state hospital for the insane. At the time of the transfusion she was at, or approaching, her menopause, and the transfusion was the turning point that caused her subsequent illness and suffering.

Blood transfusions at the hospital were ordered only by a patient's attending physician or by a house physician. In this case one of the physicians in the hospital, Dr. James S. Houck, following the usual practice, left at the office of the hospital a filled out form directing the giving of a blood transfusion to one of his patients, a woman on the same floor of the hospital as the plaintiff. In due course of time the form with its directions and the blood to be used were given to the intern and the nurse. Through some mistake the intern and the nurse entered the plaintiff's room and gave her the transfusion.

The question here involved, said the court, is whether or not the defendant, a charitable hospital, is liable in damages to the plaintiff, a paying patient, for injuries due to the mistake of an intern attached to the defendant hospital. Historically the courts have been chary to fix liability on charitable hospitals, especially for torts to patients. Originally there was a theory that a patient entering a charitable hospital, owing to the very nature of its eleemosynary work, waives any claim for damage resulting to the patient in the hospital. This theory is not now extant in New York, at least with reference to paying patients. Liability can be placed on a charitable hospital for damage to a patient from the negligent performance of an administrative or ministerial act on the part of an employee, but it is very substantially established in the law of this state that a hospital is not liable for a tort committed on a patient by a physician, nurse or other employee in his or her performance of professional duties, provided the hospital has exercised due care in the selection of properly qualified professional staff. If the hospital joins in a tort perpetrated by a professional member of its staff, however, or could have prevented such tort in the exercise of proper supervision of occurrences in the hospital, then there might be liability on the part of the hospital to the person injured.

Received and kept as a patient at the hospital, the plaintiff in this case was entitled to be protected by the hospital and its employees against trespass, assault and negligence if such trespass, assault or negligence could be reasonably anticipated by the hospital. If the nurse-intern team had given the transfusion to the proper patient, they were doing it in the place of her physician and in so doing would not act in any respect on behalf of, or for, the hospital. No matter how seriously they would have erred in giving the transfusion to the proper patient, if they had done so they could not cause liability on the hospital by such error. But the transfusion was not given to the proper patient but to the plaintiff. What happened here was at least negligence on the part of the hospital's employees, if not trespass and assault. To avoid such negligence or act of misconduct would be the duty of the hospital, and yet here such negligence and misconduct were committed by the very persons whom the hospital employed for certain duties and thus gave access to the rooms and persons of patients. Their entrance into the wrong room caused the professional nature of their errand to cease. As employees of the hospital they, among other employees, had placed on them the duty of protecting patients. After notice was given to them by the plaintiff that she was not the patient for whom the transfusion was intended, they, as servants of the hospital, should have ceased in their effort to give the transfusion and should have protected her from the torts inflicted on her. In their failure to perform this duty, they did not act as professional persons, and there is no reason why their failure should not cast liability on the hospital. The judgment in favor of the plaintiff was affirmed.—*Necolayff v. Genesee Hospital*, 61 *N. Y. S. (2d) 832 (N. Y., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, Nov. 23, page 734.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, Jan. 21-23. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

DELAWARE: *Examination.* Dover, Jan. 14-16. *Endorsement.* Dover, Jan. 21. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * *Reciprocity.* Washington, Dec. 9. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

INDIANA: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

KANSAS: Kansas City, Dec. 4-5. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

KENTUCKY: *Examination.* Louisville, Dec. 16-18. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

MARYLAND: *Examination.* Baltimore, Dec. 10-13. Sec., Dr. E. R. Kloman, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, Dec. 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MICHIGAN: * Ann Arbor, Dec. 9-11. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MINNESOTA: * Minneapolis, Jan. 21-23. Sec., Dr. J. F. Du Bois, 230 Lowery Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: *Reciprocity.* Jackson, Dec. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

NEBRASKA: * *Examination.* Omaha, June 1947. Dir., Bureau of Examining Board, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

NEW HAMPSHIRE: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NORTH CAROLINA: *Examination.* Winston-Salem, Dec. 16-19 postponed. *Endorsement.* Raleigh, Jan. 16. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 7-10. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * *Reciprocity.* Oklahoma City, Dec. 29-30. Sec., Dr. J. D. Osborn Jr., Frederick.

SOUTH DAKOTA: * *Examination and Reciprocity.* Vermillion, Jan. 21-22. Sec., Dr. Gilbert Cottam, State Capitol Bldg., Pierre.

TENNESSEE: * Memphis, Dec. 18-19. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

UTAH: Salt Lake City, Dec. 18-20. Asst. Dir., Department of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City 1.

VERMONT: *Examination.* Burlington, Jan. 31-Feb. 1. Sec., Board of Medical Registration, Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, Dec. 3-6. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WASHINGTON: *Examination.* Seattle, January 1947. Sec., Mr. Nelson Vaughn, Olympia.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Dec. 10. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

COLORADO: Denver, Dec. 11-12. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

IOWA: Des Moines, Jan. 14. Corresponding Sec., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

SOUTH DAKOTA: Sioux Falls, Dec. 6-7. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Memphis and Nashville, Dec. 19-20. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

WISCONSIN: Milwaukee, Dec. 7. Sec., Professor Robert N. Bauer, 152 W. Wisconsin Ave., Milwaukee 3.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

32:135-276 (Aug.) 1946

Precordial Electrocardiogram in High Lateral Myocardial Infarction. F. F. Rosenbaum, F. N. Wilson and F. D. Johnston.—p. 135.
*Demonstration of Ventricular Septal Defect by Means of Right Heart Catheterization. Eleanor deF. Baldwin, Lucille V. Moore and R. P. Noble.—p. 152.
Simplified and More Standardized Technic for Recording Multiple Precordial Electrocardiograms. A. J. Geiger and Jessamine R. Goerner. —p. 163.
Influence of Variations in Atmospheric Temperature and Humidity on Rates of Water and Heat Loss from the Respiratory Tract of Patients with Congestive Heart Failure Living in a Subtropical Climate. G. E. Burch.—p. 190.
Effect of Meals on Electrocardiogram in Normal Subjects. E. Simonson, A. Henschel and A. Keys.—p. 202.
Velocity of Blood Flow in Normal Pregnant Women. B. Manchester and S. D. Loube.—p. 215.
Acute Pericarditis in Young Adults. R. M. Nay and N. H. Boyer. —p. 222.
*Incidence of Rheumatic Fever and Heart Disease in School Children in Dublin, Ga., with Some Epidemiologic and Sociologic Observations. R. W. Quinn.—p. 234.
*Anomalous Origin of Left Coronary Artery from Pulmonary Artery: Report of Case Diagnosed Clinically and Confirmed by Necropsy. S. Eidlow and Eleanor R. Mackenzie.—p. 243.

Catheterization of Right Side of Heart.—According to Baldwin and her co-workers clinical diagnosis of isolated ventricular defects has been entirely dependent on the presence of the pathognomonic Roger murmur, a localized loud blowing systolic murmur heard best just to the left of the midsternum and often accompanied with a palpable thrill. Since the shunt is arteriovenous, cyanosis is not present except rarely as a terminal manifestation. Many ventricular septal defects are not recognized during life but are found only at necropsy. The development of a technic for the catheterization of the right side of the heart in man presents a new diagnostic aid for the detection of this congenital defect. Following the introduction of a catheter into the right side of the heart, samples of blood may be withdrawn from various areas by determining the position of the tip of the catheter by fluoroscopy. The presence of an arteriovenous shunt may then be demonstrated by the comparison of the respiratory gas contents of these blood samples with one another and with samples of arterial blood. Further information on the hemodynamics may be obtained by connecting the intracardiac catheter to a recording type of manometer, such as the one described by Hamilton, and analyzing the resultant pressure tracings. By direct observation of the movements of the catheter within the right side of the heart, impressions as to the size, shape and location of the chambers of the heart may be acquired which supplement the information obtained from the routine x-ray and fluoroscopic studies. The authors report observations made by means of right heart catheterization on the hemodynamics of two subjects with congestive failure of obscure etiology. In both subjects a large ventricular septal defect was demonstrated by the arterialization of the right ventricular blood.

Rheumatic Fever and Heart Disease in School Children.—Dublin, Ga., the site of the U. S. Naval Hospital for Rheumatic Fever, seemed well suited for a survey of heart disease in school children, since it is located in one of the Southern states at a latitude of 32.5 degrees and a longitude of 83 degrees. The elevation is 234 feet. The annual rainfall is approximately 50 inches. A cardiac survey of 401 school children in the fifth, sixth, seventh and eighth grades revealed 6 cases of organic heart disease, giving an incidence of 1.5 per cent. Of these, 4 had rheumatic heart disease and 2 had congenital heart disease. The incidence of rheumatic heart disease was found to be 1 per cent for all children examined, 1.26 per cent for white children and 0.60 per cent for Negro children. The incidence of congenital heart disease was 0.5 per cent. The incidence of rheumatic fever was 2 per cent. The incidence in white children was 2.10 per cent and in Negro children 0.60 per cent. Climatologic and socioeconomic factors such as dampness, crowding, inadequate housing, malnutrition and low economic status, which are very important epidemiologically in rheumatic fever and rheumatic heart disease, were found to exist in Dublin, Ga.

Anomalous Origin of Left Coronary Artery.—Eidlow and Mackenzie give the history of a female infant who was born in February 1945 and died in June of the same year. The anomalous origin of the left coronary artery from the pulmonary artery was diagnosed during life. The observations on which the diagnosis was made were paroxysms of cardiac pain characterized by sweating, pallor, cyanosis and dyspnea, great enlargement of the heart both clinically and by x-ray examination, and electrocardiograms showing inversion of T waves in leads 1 and 2. These constitute a syndrome indicating inadequate arterial blood supply to the heart muscle. The clinical diagnosis was confirmed by necropsy, which revealed a left coronary artery arising from the pulmonary artery and supplying the left ventricle alone. No anastomotic coronary circulation existed. Pulmonary atelectasis, a feature of this case, has been recorded in other cases and is probably secondary to the hypertrophy and dilatation of the heart. Consistent with the majority of cases reported, this patient appeared normal at birth. There is no adequate explanation for the absence of symptoms during the early weeks of life. One may speculate that the blood supply to the myocardium may be adequate when activity is at a minimum. Another explanation suggested is that a slight patency of the ductus arteriosus, which may have escaped occlusion in the early weeks of life, permits a mixture of arterial with venous blood in the pulmonary artery.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

56:141-278 (Aug.) 1946

Roentgenologic Manifestations of Primary Pulmonary Coccidioidomycosis. M. Rakofsky and T. W. Knickerbocker.—p. 141.
Interlobar Empyema. J. Levitin.—p. 156.
*Multiple Fractures in Long Bones of Infants Suffering from Chronic Subdural Hematoma. J. Caffey.—p. 163.
Polyostotic Fibrous Dysplasia and Osteopathia Condensans Disseminata: Case Report. E. C. Osgood.—p. 174.
Traumatic Pneumocephalus Associated with Cerebrospinal Otorrhea. I. M. Tarlov and J. Mule.—p. 179.
Congenital Talonavicular Synostosis Associated with Hereditary Multiple Ankylosing Arthropathies. I. Weitzner.—p. 185.
Pathogenesis of Charcot's Joint. P. J. Delano.—p. 189.
New Series of Radiopaque Compounds: I. Chemical Structures, Channels of Excretion and Roentgenographic Uses. B. S. Epstein, S. Natelson and B. Kramer.—p. 201.
Capsules and Inserter for Use of Radium Cells in Treatment of Cancer of Uterine Fundus. L. A. Campbell.—p. 208.
Irradiation Sickness: Histamine Effect Teated with Benadryl: Preliminary Report. J. E. Lofstrom and C. E. Nurnberger.—p. 211.
Some Historical Data Relating to Discovery of Roentgen Rays. L. E. Etter.—p. 220.

Fractures in Long Bones of Infants with Subdural Hematoma.—Caffey reports 6 cases in which there were 23 fractures and 4 contusions of the long bones. In not a single case was there a history of injury to which the skeletal lesions could reasonably be attributed, and in no case was there clinical or radiologic evidence of generalized or localized skeletal disease which would predispose to pathologic fractures. It is possible that some of the fractures in the long bones were caused by the same traumatic forces which were presumably responsible for the subdural hematomas. This did not happen in the majority of the fractures, because 17 fresh fractures appeared many weeks and months after the first clinical manifestations of subdural hematoma and after the withdrawal of bloody fluid from the subdural space. In 1 case fractures in the long bones developed six months after the subdural tumor had been removed surgically. The author also considered the possibility that the long bones were injured and fractured during convulsive seizures. There is little evidence to support such

a postulate. The author concludes that the presence of unexplained fractures in the long bones warrants investigation for subdural hematoma. Routine x-ray examination of the long bones in subdural hematoma is necessary for the identification of fractures, because many of them are silent clinically.

American Journal of Tropical Medicine, Baltimore

26:379-542 (July) 1946

Experimental Studies of Bullis Fever and Dengue Fever. H. R. Livesay, D. J. Wilson, M. Pollard and J. C. Woodland.—p. 379.
Residual Spraying of Dwellings with DDT in Control of Malaria Transmission in Panama, with Special Reference to Anopheles Albimanus. H. Trapido.—p. 383.
Epidemic Encephalitis in Far East: Review. J. Warren.—p. 417.
Experiments with Various Colombian Marsupials and Primates in Laboratory Cycles of Yellow Fever. M. Bates and M. Roca-Garcia.—p. 437.
Studies on Cyclic Passage of Yellow Fever Virus in South American Mammals and Mosquitoes: II. Marmosets (Callithrix Penicillata and Leontocebus Chrysomelas) in Combination with Aedes Aegypti. Mary B. Waddell and R. M. Taylor.—p. 455.
Dispersal of Aedes Albopictus in Territory of Hawaii. D. D. Bonnet and D. J. Worcester.—p. 465.
Studies on Imported Malarias: 5. Transmission of Foreign Plasmodium Vivax by Anopheles Quadrimaculatus. M. D. Young, J. M. Ellis and T. H. Stubbs.—p. 477.
Penicillin Therapy in Relapsing Fever: Report of Case. I. Fischer.—p. 483.
Mild Exanthematous Disease Seen in Schouten Islands. F. C. Weber, T. W. Oppel and R. W. Raymond.—p. 489.
Intestinal Helminthiasis: Clinical Survey of 618 Cases of Infection with Common Intestinal Helminths in Children. N. H. Einborn and J. F. Miller.—p. 497.
Efficient Concentration Method (AEX) for Detecting Helminthic Ova in Feces (Modification of the Telemann Technic). E. H. Loughlin and N. R. Stoll.—p. 517.
Opportunies for Training and Research in Tropical Medicine and Public Health in Mexico. E. H. Hinman and M. M. Baez.—p. 529.
Heat Rash as Problem in Naval Service. G. J. Duffner.—p. 539.

Annals of Internal Medicine, Lancaster, Pa.

25:195-402 (Aug.) 1946

*Problem of Prolonged Hepatitis with Particular Reference to Cholangiolitic Type and to Development of Cholangiolitic Cirrhosis of Liver. C. J. Watson and F. W. Hoffbauer.—p. 195.
Medicine and Education. E. E. Irons.—p. 228.
Infectious Mononucleosis: Report of Epidemic in Army Post: Part II. H. F. Wechsler, A. H. Rosenblum and C. T. Sills.—p. 236.
Nutritional Status of Japanese Prisoners of War, Burma 1945. R. K. Kark, H. F. Aiton and E. D. Pease.—p. 266.
*Beriberi in Japanese Prison Camp. R. E. Hibbs.—p. 270.
Sudden Death in Rheumatic Fever. G. C. Griffith and R. W. Huntington.—p. 283.
Malaria Triad. T. H. Noehren.—p. 293.
Medical Man and Constitution. K. C. Sears.—p. 304.

Prolonged Hepatitis and Cholangiolitic Cirrhosis.—Watson and Hoffbauer report 8 cases of cholangiolitic hepatitis. Certain cases of prolonged hepatitis exhibit normal or relatively normal hepatocellular function in the presence of regurgitation jaundice. The histologic changes often appear inadequate to account for the jaundice. These consist of a varying amount of periportal lymphocytic infiltration, bilirubin staining of the liver cells, especially in the centers of the lobules, and bile thrombi. In the absence of sufficient evidence of this type to indicate intrahepatic biliary obstruction, it is believed that the continued regurgitation of bile supports the concept of increased permeability of the cholangioles. This regurgitation is manifested by hyperbilirubinemia, hypercholesterolemia, hyperphosphatasemia and pruritus. In some cases of epidemic hepatitis liver biopsy may fail to reveal appreciable hepatocellular injury when infectious activity is still manifest. Since in these cases there is often residual evidence of reduced hepatocellular function, it is believed that initially there was a more severe liver cell injury and that the prolonged regurgitation jaundice indicates more severe damage of the intrahepatic bile duct system than in the ordinary case. The authors suggest that the term cholangiolitic cirrhosis is more appropriate and distinctive than hypertrophic biliary cirrhosis. Regurgitation jaundice without ascites, but with pruritus, hypercholesterolemia and hyperphosphatasemia are prominent in this group of cases. The final stages of cholangiolitic cirrhosis following prolonged hepatitis may be indistinguishable anatomically from ordinary atrophic or portal cirrhosis. The cholangiolitic type of hypertrophic cirrhosis is believed to be distinct from the "hypertrophic" fatty cirrhosis which represents an intermediate stage between the fatty liver and the atrophic cirrhosis of chronic alcoholic addicts or other conditions in which dietary deficiency is probably the most important etiologic factor.

Beriberi in Japanese Prison Camp.—Hibbs reports observations on beriberi over a period of thirty-four months on about 8,000 Americans who had surrendered on Bataan and Corregidor. Beriberi had the highest incidence of vitamin deficiency disease, every one in the camp having some form of beriberi at one time or another. It also was responsible for more deaths than any other vitamin deficiency disease. A group of 96 cases of beriberi were selected for a therapeutic response experiment by a Japanese doctor. American doctors conducted the study. The patients selected had the severest form of painful feet. They all demonstrated the typical "Cabanatuan shuffle" and sensory manifestations of symmetrical ascending peripheral neuritis of beriberi. Conclusive results were not obtained because the patients were still issued a borderline starvation diet. The dosages and length of treatment were inadequate. Thiamine hydrochloride first corrected the anorexia, nervous manifestations, tachycardia and arrhythmia and improved the exercise tolerance of the heart in cases of beriberi. Beriberi peripheral neuritis responded sooner to the entire B complex than to thiamine hydrochloride alone. The intrathecal route of administration was no more efficacious than subcutaneous injection. Complete saturation of the body with thiamine hydrochloride was not attained by a short course of large doses. The author stresses that more vitamins can be bought in a grocery store than in a drug store. There may be nutritional causes of polyneuritis other than lack of thiamine. Palmar and plantar erythema are consistently seen in dry beriberi. "Beriberi spots" is a newly described skin lesion probably due to thiamine deficiency. Motor manifestations are often minimal or lacking in beriberi peripheral neuritis. Posterolateral column degeneration of the spinal cord in malnutrition is probably due to lack of vitamin B_1. An irreversible optic atrophy may result from severe beriberi.

Archives of Dermatology and Syphilology, Chicago

54:119-254 (Aug.) 1946

*Treatment of Basal Cell Epithelioma by Injection of Tissue Extracts: Preliminary Report. J. C. Amersbach, Elsie M. Walter and G. S. Sperti.—p. 119.
Scleroderma of Face Involving the Gingiva: Case. W. C. Davis and T. S. Saunders.—p. 133.
Uses and Abuses of Penicillin in Dermatology. F. E. Cormia and W. D. Alsever—p. 136.
Etiologic Considerations of Keratosis Blennorrhagica: Report of Case in Which Penicillin Was Used. E. Ladany and J. D. Hughes.—p. 150.
Recurrent Genito-Oral Aphthosis and Uveitis with Hypopyon (Behcet's Syndrome): Report of 2 Cases. Helen O. Curth.—p. 179.
Acute Lupus Erythematosus Disseminatus Treated with Penicillin: Case. E. A. Strakosch.—p. 197.
Device of Value for Roentgen Ray Epilation. O. L. Levin and H. T. Behrman.—p. 200.
Lymphangioma Circumscriptum: Successful Results of Treatment with Solid Carbon Dioxide. J. Q. Gant Jr.—p. 202.
Yaws Clinic in New Georgia. L. Sompayrac and H. Spence.—p. 205.
Dermatitis Due to Preparation and Administration of Penicillin Solution. H. Goodman.—p. 206.
Sporotrichosis: Report of Case of Its Occurrence in California. A. Gelber.—p. 208.
Formula for Cryotherapy for Acne and Postacne Scarring. I. Zugerman.—p. 209.
Epilation by Electrodesiccation of Hairs of Scalp Infected by Fungi. M. J. Costello.—p. 210.

Injection of Tissue Extract in Treatment of Basal Epithelioma.—At the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital patients were selected with small basal cell epitheliomas varying in size from that of a pea to 3 or 4 cm. in the longest dimension. All types of basal cell epitheliomas were taken indiscriminately. Before treatment was given, a colored photograph was taken of the lesion and a biopsy was performed. The patient was then given a series of weekly injections of either spleen or liver extract. The extracts were produced from normal human spleens and livers obtained at necropsy from persons who died suddenly as the result of accident or heart failure. Amersbach and his co-workers review observations on 21 patients with basal cell epithelioma who were treated by this method. The lesion of 1 treated with spleen extract failed to regress. Fourteen have had complete regression and disappearance of the lesion. The

remaining 6 are still under treatment, but all have shown regression. In none of the cases observed since completion of the treatment have there been signs of recurrence in the period of one to two years.

Archives of Pathology, Chicago

42:113-244 (Aug.) 1946

Radiate Formation on Pathogenic Fungi in Human Tissue. M. Moore. —p. 113.
Leukopenic Factor of Exudates: Mechanism Concerned in Leukopenia Induced by It. V. Menkin.—p. 154.
Experimental Endocarditis of Dogs. G. F. Dick and W. B. Schwartz. —p. 159.
In Vitro Studies on Physiology of Cells: Interactions of Thymic Cells and Oxidation-Reduction Indicator, 2,6-Dichlorophenolindophenol. R. Schrek.—p. 163.
Cerebral Concussion: Histochemical Demonstration of Nucleases in Cerebrospinal Fluid. E. A. Spiegel, M. Spiegel-Adolf and H. T. Wycis. —p. 175.
Experimental Medionecrosis of Aorta. J. G. Schlichter.—p. 182.
Course of Wound Healing in Skin of Mice Under the Influence of Carcinogens. M. Silberberg and Ruth Silberberg.—p. 193.
Disseminated Reticuloendothelial Tumor of Bone Marrow with Nodular Osteosclerosis. F. Windholz.—p. 206.
*Alloxantin: Investigation of Substance as Used in Experimental Production of Diabetes. P. A. Herbut, J. S. Watson and Ella Perkins. —p. 214.
Reaction of Rats Following Injection of Anti-Rat Heart Immune Serum. F. C. Bauer Jr.—p. 222.

Alloxantin in Experimental Production of Diabetes.—Herbut and his colleagues found that alloxantin administered by the intravenous route produced an effect similar to that of alloxan. There was temporary hyperglcemia followed by temporary hypoglycemia and then either transient hyperglycemia or, in a few of the animals, permanent hyperglycemia with excretion of sugar in the urine. Undesirable side effects consisted of thrombosis of the veins of the ears, severe pulmonary congestion and edema, and necrosis of the central portions of the hepatic lobules. The authors conclude that although the diabetogenic action of alloxantin is unequivocal, it is not a good substitute for alloxan because it is difficult to administer, it is toxic, and nonlethal doses will produce diabetes in only a few animals.

Archives of Surgery, Chicago

53:111-246 (Aug.) 1946

*Surgical Approach to Hypertension: Second Report. G. de Takats, G. W. Graupner, E. F. Fowler and R. J. Jensik.—p. 111.
Fractures of Carpal Scaphoid Bone: Analysis of 66 Cases. M. M. Bannerman.—p. 164.
Pericoronary Neurectomy in Abolishing Anginal Pain in Coronary Disease: Experimental Evaluation. M. Fauteux and O. Swenson.—p. 169.
*Intraperitoneal Administration of Succinylsulfathiazole and Phthalylsulfathiazole: Their Use in Prophylaxis and Treatment of Peritonitis. J. P. Young Jr. and W. H. Cole.—p. 182.
Lymphadenoid Goiter: Its Differentiation from Chronic Thyroiditis. C. C. Parmley and C. A. Hellwig.—p. 190.
Anaphylaxis-like Reactions Produced by Ascaris Extracts: III. Role Played by Leukocytes and Platelets in Genesis of Shock. M. Rocha e Silva, A. Porto and Sylvia O. Andrade.—p. 199.
Review of Urologic Surgery. A. J. Scholl, F. Hinman, A. B. Hepler, R. Gutierrez, G. J. Thompson, E. N. Cook and V. J. O'Conor.—p. 214.

Surgical Approach to Hypertension.—De Takats and his associates discuss observations on 52 patients, stressing the importance of rigid selection. In the first group, in which there was a clearcut indication for operation, the ages of the patients did not exceed 40 years. The systolic pressure varied between 200 and 150 mm. of mercury and the diastolic from 120 to 100. In these patients the pressure comes down to normal during sleep. The authors include in this group early adolescent hypertensive patients who are completely asymptomatic but have a bad family history and show exaggerated vasomotor reactivity. Also included are some patients who have advanced vascular damage in the retina, heart or kidney but who relax under sodium amytal to a diastolic pressure of 100 mm. In the 17 patients of this first group, the response was gratifying. Only 2 had recurrent hypertension, which was corrected after completion of a technically incomplete operation. In the second group operated on by the authors operability was debatable, but it is pointed out that some of these patients obtained unexpected relief and others had a slightly lower pressure but the organic damage was permanent and progressive. The patients in this group had organic vascular damage. Six of the 28 patients of this group showed recurrence. The third group consists of patients in whom splanchnic section is not indicated. Such patients have large recurrent hemorrhages or exudates in the retina. The diastolic pressure is extremely high and fixed. The urine contains albumin, casts and red cells. The urea clearance is less than 50 per cent of normal. Five such patients were operated on and no effect was noted. The authors discuss some of the problems of anesthesia, especially the avoidance of accumulation of carbon dioxide. They are convinced that so far a method has not been found which gives patients with hypertension as much benefit as the transdiaphragmatic splanchnic nerve section combined with dorsolumbar sympathetic ganglionectomy.

Intraperitoneal Administration of Sulfonamides in Peritonitis.—Young and Cole found that succinylsulfathiazole and phthalylsulfathiazole implanted in the peritoneal cavities of human beings or dogs are rapidly absorbed into the blood stream. The average peak level of the two drugs at four hours was 4 and 5 mg. per hundred cubic centimeters respectively. The rate of disappearance from the peritoneal cavity is much more rapid than that of sulfathiazole or sulfadiazine and resembles more closely the rate of disappearance of sulfanilamide. The temporary adhesions observed after the intraperitoneal implantation of sulfadiazine and sulfathiazole are not observed after the use of either drug. The drugs can be given intraperitoneally to dogs in a dose of at least 1 Gm. per kilogram of body weight without reaction. The authors have adopted a dose of 0.1 Gm. per kilogram of body weight for human beings, but in view of the low toxicity in animals it appears that the dose could be increased. The series treated by the authors is too small to allow comparison with a control series. Since both drugs are extremely effective in reducing the Escherichia coli count of the stool when given orally, it is reasonable to suppose that they could also be effective against the same organism occurring as a contaminant following intestinal resection. Since the blood level is slightly higher and more prolonged with phthalylsulfathiazole, this drug might be expected to be more effective than succinylsulfathiazole.

Arizona Medicine, Phoenix

3:201-268 (July) 1946

*Sudden Death in Obstetrics. H. W. Johnson.—p. 225.
Evaluation of Changes in Gangrene of Extremities. P. A. Wheeler and L. V. Mulligan.—p. 229.
Scalenus Anticus Syndrome. H. D. Cogswell.—p. 232.
Pediatric Parenteral Fluids. M. C. F. Semoff.—p. 237.
*Effect of Tobacco Smoke on Kahn and Hinton Reactions. E. L. Breazeale and C. W. Dunn.—p. 239.
Selling Medical Plans to Doctors. T. L. Williams.—p. 240.

Sudden Death in Obstetrics.—Sudden death in the obstetric patient is usually due to shock, hemorrhage or a combination of these two factors. Shock in the obstetric patient seems to be caused by (1) preeclampsia and eclampsia toxemia with or without the precipitating factors of anesthesia, surgery, trauma and blood loss, (2) dystoxia followed by exhaustion, dehydration, difficult forceps delivery and blood loss and (3) anaphylactoid reactions following blood transfusions and drugs. Johnson has seen fatal anaphylactoid reactions from intravenous injection of sulfanilamide, blood transfusion and in 2 cases in which ergotrate had been given. He has seen profound shock follow the administration of 1 minim of pitocin. Intradermal tests for sensitivity require only a few minutes and would avoid such grave complications. Recently 100 intradermal tests with ergotrate have been made while the patients were on the delivery table. There were 98 negative, but 2 positive reactions. Fatal hemorrhage may be brought on by postpartum hemorrhage from such causes as uterine atony, extensive cervical lacerations and ectopic pregnancy. The author adds to this group spontaneous separation or manual removal of the placenta in abdominal pregnancies and manipulated placenta previas. Shock from hemorrhage may cause death, but it is relatively infrequent when uncombined with the other causes of obstetric shock.

Effect of Tobacco Smoke on Kahn and Hinton Reactions.—Breazeale and Dunn carried out experiments to test the effect of tobacco smoke on the Kahn and Hinton reactions. Serums were drawn for routine examination by the methods of Kahn and Hinton. Control tests were made in a room free from chemical fumes. The serum remaining after running the

control test were then divided into two portions. The first portion was subjected to cigar smoke for a period of thirty minutes and then the standard Kahn and Hinton tests were run in an atmosphere of cigar smoke. The second portion was run only in the atmosphere of smoke without previous exposure. It was found that exposure to tobacco smoke increases the "titer" on serum from 1 to 3 points. On visual reading the serums exposed to smoke were more strongly positive than were the controlled serums. Serums that were exposed to smoke before and during the examination gave a more strongly positive reaction than did serums exposed to smoke only during the actual performance for the test itself. The authors conclude that tobacco smoke in sufficient concentrations will influence the accuracy of the various serologic tests for syphilis.

Endocrinology, Springfield, Ill.

39:1-84 (July) 1946

Quantitative Effects of Hypophysectomy on Testis and Prostate of Dogs. C. Huggins and P. S. Russell.—p. 1.

Method for Locating Radioactive Elements in Tissues by Covering Histologic Sections with Photographic Emulsion. L. F. Bélanger and C. P. Leblond.—p. 8.

Effect of Thiouracil on Juvenile Plumages of Brown Leghorn Fowl. Mary Juhn.—p. 14.

Pituitary Gonad Interaction in Immature Female Parabiotic Rats. R. K. Meyer, C. Biddulph and J. C. Finerty.—p. 23.

Effect of Adrenocorticotrophic Hormone on Urinary Excretion of Sodium, Chloride, Potassium, Nitrogen and Glucose in Normal Rats. D. J. Ingle, C. Hao Li and H. M. Evans.—p. 32.

Production of Alimentary Glycosuria by Forced Feeding in Rat. D. J. Ingle.—p. 43.

Comparison of Acute Effects of Corticosterone and 17-Hydroxycorticosterone on Body Weight and Urinary Excretion of Sodium, Chloride, Potassium, Nitrogen and Glucose in Normal Rat. D. J. Ingle, Ruth Sheppard, Elizabeth A. Oberle and M. H. Kuizenga.—p. 52.

Illinois Medical Journal, Chicago

90:1-72 (July) 1946

Infectious Diarrhea of the Newborn. Henrietta Herbolsheimer.—p. 6.

House of Delegates, Illinois State Medical Society.—p. 10.

Journal of Clinical Endocrinology, Springfield, Ill.

6:483-534 (July) 1946

Studies Concerning Cause and Purpose of Menstruation. O. W. Smith and G. V. S. Smith.—p. 483.

Chronic Idiopathic Hypoparathyroidism with Superimposed Addison's Disease in Child. Martha F. Leonard.—p. 493.

Adrenocortical Cancer with Undulating Fever in Addison's Disease. A. P. Cawadias.—p. 507.

Journal of Infectious Diseases, Chicago

79:1-100 (July-Aug.) 1946

Infections with Plasmodium Gallinaceum in Chick Embryos Induced by Exoerythrocytic and Blood Stages. A. Zuckerman.—p. 1.

Studies with Coccidioides Immitis: I. Submerged Growth in Liquid Mediums. W. G. Roessler, E. J. Herbst, W. G. McCullough, R. C. Mills and C. R. Brewer.—p. 12.

Id.: II. In Vitro Effects of Streptothricin and Streptomycin. W. G. Roessler, E. J. Herbst, W. G. McCullough, R. C. Mills and C. R. Brewer.—p. 23.

Storage of Mouse Adapted Strains of Poliomyelitis Virus and of Japanese B Encephalitis Virus at Subfreezing Temperatures. J. L. Melnick.—p. 27.

*Problem of Dangerous Carrier of Hemolytic Streptococci: IV. Observations on Role of Hands, of Blowing the Nose, of Sneezing and of Coughing in Dispersal of These Micro-Organisms. M. Hamburger Jr. and Margaret J. Green.—p. 33.

Fungicidal Action of Triethylene Glycol. Margaret Mellody and E. Bigg.—p. 45.

*Outbreak of Gastroenteritis Presumably Caused by Salmonella Pullorum. R. B. Mitchell, F. C. Garlock and R. H. Broh-Kahn.—p. 57.

Effect of Time of Contact at 37 C. and Hydrogen Ion Concentration on Degree of Neutralization of Equine Encephalomyelitis Virus (Eastern Type) by Immune Serum. N. A. Labzoffsky.—p. 63.

Hemolytic Corynebacterium Resembling Corynebacterium Ovis and Corynebacterium Pyogenes in Man. P. D. MacLean, A. A. Liebow and A. A. Rosenberg.—p. 69.

Salmonella Types of Pacific Area. R. B. Lindberg and M. Bayliss.—p. 91.

Rapid Agglutination Test as Possible Aid in Laboratory Diagnosis of Ornithosis. N. A. Labzoffsky.—p. 96.

Carrier of Hemolytic Streptococci.—The number of beta hemolytic streptococci captured by sterile handkerchiefs after blowing the nose, sneezing and coughing was compared by Hamburger and Green in carriers exhibiting positive nose and throat cultures and those with positive throat but negative nose cultures. Sneezing, coughing and forcible breathing on blood agar plates were also investigated. Millions of hemolytic streptococci were frequently expelled during a single noseblow by carriers with positive nose cultures. Extensive contamination of the hands by these bacteria was found in carriers exhibiting positive nose cultures but very little of the hands of carriers with positive throat but negative nose cultures. Gross contamination of the hands may occur instantaneously during a single noseblow. Relatively few hemolytic streptococci were expelled by coughing. Variable numbers were expelled by induced sneezing. Nine out of 10 throat carriers with negative nose cultures expelled very few streptococci by sneezing. Carriers with positive nose cultures, however, were sometimes capable of sneezing out great numbers, though the experiments suggest that most of the streptococci were contained in nasal secretion which would not be finely atomized or propelled very far from the sneezer. It is concluded that blowing the nose is the most important of the respiratory activities which result in the dissemination of hemolytic streptococci under epidemic conditions.

Gastroenteritis from Salmonella Pullorum.—According to Mitchell and his associates Salmonella pullorum is a common cause of disease in chickens and is known to be present in the eggs of infected fowls and accordingly may be found in food products. This micro-organism is thought not to be concerned with human disease and is usually described as nonpathogenic for man. Recently the Army Air Forces Central Diarrheal Disease Control Laboratory of the Army Air Forces School of Aviation Medicine investigated an extensive outbreak of gastroenteritis among personnel at an army air base. The evidence obtained indicated that this outbreak could be attributed to the ingestion of food prepared from uncooked eggs and that Salmonella pullorum was prominently associated with the epidemic. The outbreak of gastroenteritis involved a total of 423 persons who required medical treatment. Of this number 172 required hospitalization. The source of the infection could be traced to rice pudding containing eggs served at three successive meals. This rice pudding formed the sole common link between all the patients. Salmonella pullorum was isolated from 11.7 per cent of the hospitalized patients, and this organism was believed to have been the probable cause of the infections and to have been introduced into the rice pudding by infected eggs. This outbreak is the first reported large scale epidemic of human gastroenteritis associated with S. pullorum. Uncooked eggs and egg products infected with S. pullorum constitute a potential source of outbreaks of human gastroenteritis.

Journal of International College of Surgeons, Chicago

9:419-510 (July-Aug.) 1946

Improvements in Single Stage Operation Without Colostomy for Cancer of Large Bowel. W. W. Babcock.—p. 419.

Carcinoma of Uterus: Question of Treatment by Surgery or Irradiation. D. O. Ferris.—p. 421.

Exomphalos. J. A. East.—p. 426.

Choice of Treatment for Carcinoma of Cervix Uteri. F. Gentil.—p. 432.

Microscopically Verified Success of Pinch Homografting in Human Case. F. Mandl and N. Rabinovici.—p. 439.

Gas Gangrene: Bacteremia and Carbohydrogenic Toxemia. B. O. C. Pribram.—p. 447.

J. Neuropathology and Exper. Neurology, Baltimore

5:169-270 (July) 1946

Schizencephalies: Study of Congenital Clefts in Cerebral Mantle: II. Clefts with Hydrocephalus and Lips Separated. P. I. Yakovlev.—p. 169.

Motor Cortex in Amyotonia Congenita. W. Freeman.—p. 207.

Subarachnoid and Ventricular Implants in Ependymal and Other Gliomas. I. M. Tarlov and L. M. Davidoff.—p. 213.

Cortical Anomaly with Some Porencephalic Features. C. Davison and A. P. Friedman.—p. 225.

Circumscribed Arachnoidal Sarcoma of Cerebellum: Case. K. T. Neubuerger and L. W. Greene Jr.—p. 233.

Complete and Permanent Elimination of Hypothalamic Thermogenic Mechanism Without Affecting Adequacy of Heat Loss Mechanism. J. R. Blair and A. D. Keller.—p. 240.

Porencephaly: Clinicopathologic Study. R. Cohn and M. A. Neumann.—p. 257.

Journal of Pediatrics, St. Louis

29:129-268 (Aug.) 1946

Mumps: Technics of Laboratory Diagnosis, Tests for Susceptibility and Experiments on Specific Prophylaxis. J. F. Enders.—p. 129.
*Juvenile Rheumatoid Arthritis: Study of 56 Cases, with Note on Skeletal Changes. J. A. Coss and R. H. Boots.—p. 143.
Epidemiologic Studies in Dental Caries: I. Pattern of Dental Caries in Iowa City Children. J. D. Boyd and V. D. Cheyne.—p. 157.
Influence of Human Serum Albumin on Edema in Erythroblastosis Fetalis. M. Jacobi, A. Litvak and S. Gruber.—p. 177.
Diagnosis and Management of Severe Infections in Infants and Children: Review of Experiences Since Introduction of Sulfonamide Therapy: VI. Acute Iliac Lymphadenitis. M. J. Carson and Alexis F. Hartmann.—p. 183.
Treatment of Scabies in Children with New Sarcopticide. T. J. McElhenney.—p. 189.
Streptomycin in Pediatrics. Hattie E. Alexander.—p. 192.
Salmonella Anatum Infection. P. J. Almaden and J. Wahlin.—p. 199.
Treatment of Epidemic Diarrhea of the Newborn. M. J. Glynn.—p. 205.
Behavior Aspects of Care of Premature Infant. A. Gesell.—p. 210.
Congenital Adrenal Cortical Insufficiency Associated with Macrogenitosomia: Follow-Up and Terminal Report. H. E. Thelander.—p. 213.
Congenital Aortic Atresia. N. H. Isaacson, S. D. Spatt and D. M. Grayzel.—p. 222.
Foreign Body in Duodenum Causing Urinary Disturbance. E. T. McEnery and P. F. Fox.—p. 226.
Malignancy of Genitourinary Tract in Children: Report of Case of Sarcoma of Vulva. A. C. Service and R. C. Derbyshire.—p. 228.

Juvenile Rheumatoid Arthritis.—Since the organization of an arthritis clinic at Columbia Presbyterian Medical Center in 1928, Coss and Boots have observed 56 cases of rheumatoid arthritis in children. This group includes cases in which the onset was at 12 years of age or earlier and represents 4.9 per cent of all cases of rheumatoid arthritis. The authors have not used the term Still's disease, since Still's disease suggests a distinction between conditions the differences in which are not related to the nature of the disease process but to the reaction of the body against that process as it varies in different age groups. The presence of splenomegaly, hepatomegaly or generalized glandular enlargement is not a necessary part of the diagnosis of juvenile rheumatoid arthritis, although it is more frequent than in adult arthritis. Cardiac changes were seen in some of the patients and, if the arthritis had disappeared early with no residuum, one would be inclined to classify them as rheumatic fever. The authors found that gold therapy is no more dangerous in children than in adults. Roentgenographic comparisons of the various forms of arthritis indicate four criteria as most characteristic of juvenile rheumatoid arthritis: decalcification, bone destruction, joint space narrowing and soft tissue changes. Roentgenologic studies were available in 47 of the 56 patients with at least one of the criteria present in all. Unusual skeletal changes resulting directly from early rheumatoid arthritis usually occur when the disease begins before the second dentition and in the first three years of life.

Journal of Pharmacology & Exper. Therap., Baltimore

87:329-456 (Aug.) 1946. **Partial Index**

Fate of Acetylsalicylic Acid. D. Lester, G. Lolli and L. A. Greenberg.—p. 329.
Changes in Leukocyte Picture in Experimental Trypanosomiasis by Administration of Neostibosan and Neostam. O. Ikejiani and L. S. Mautner.—p. 343.
*Protective Action of Quinacrine Against Chloroform-Adrenalin Ventricular Fibrillation. K. I. Melville.—p. 350.
Blood Plasma Quinacrine Levels Obtained with Suppressive and Therapeutic Doses of Quinacrine Dihydrochloride. P. K. Smith, Barbara N. Gallup and L. J. Cain.—p. 360.
Lethal Dose and Average Rate of Uptake of G-Strophanthin in Heart-Lung Preparation of Dog Under Varying Conditions. A. Farah.—p. 364.
Relationship Between Lipoid Affinity and Insecticidal Action of 1, 1-bis (p-Fluorophenyl) 2,2,2-Trichloroethane and Related Substances. S. Kirkwood and P. H. Phillips.—p. 375.
Action of Alloxan, Senecionine, Sulfadiazine and Thiouracil in Hamster. P. N. Harris, R. C. Anderson and K. K. Chen.—p. 382.
Metabolic Studies on Beta-Cyclohexylethylamines. F. H. Snyder and F. W. Oberst.—p. 389.
Response of Intestine to Smooth Muscle Stimulants. G. L. Canton and G. Eastman.—p. 392.
General Systemic Actions of Di-Isopropyl Fluorophosphate (DFP) in Cats. W. Modell, S. Krop, P. Hitchcock and W. F. Riker.—p. 400.

Action of Quinacrine on Ventricular Fibrillation.—Melville observed that intravenous injections of quinacrine hydrochloride can prevent the development of ventricular fibrillation following injection of epinephrine during chloroform administration in dogs anesthetized with pentobarbital. This protective action of quinacrine is also demonstrable after atropinization or vagotomy. Electrocardiograms taken during the rise in blood pressure following injection of epinephrine in the pentobarbitalized dog show characteristic early diphasic alterations in both P and T waves. These alterations are accentuated if chloroform is being administered but under similar conditions are antagonized by quinacrine. It is suggested that this protective action of quinacrine is primarily a coronary phenomenon. Thus quinacrine (a coronary dilator agent) might offset either an initial reduction in coronary blood flow or some impairment in myocardial nutrition induced by epinephrine under the conditions described.

Journal of Thoracic Surgery, St. Louis

15:227-296 (Aug.) 1946

Technic for Segmental Pulmonary Resection, with Particular Reference to Lingulectomy. O. T. Clagett and R. A. Deterling Jr.—p. 227.
*Pneumothorax Therapy for Early Bronchiectasis, with Report of Cases. H. Hennell.—p. 239.
Solitary Primary Neurogenic Tumor of Lung: Report of a Case. J. P. Bartlett and W. E. Adams.—p. 251.
Report of Clinical Trial of Oxidized Gauze in Seven Thoracoplasties. R. A. S. Cory.—p. 261.
Partial Claviculectomy as Adjunct to Surgical Collapse of Chest Wall. A. Lambert.—p. 266.
Mucocellular Papillary Adenocarcinoma of Lung and Lobectomy. K. E. Osserman and H. Neuhof.—p. 272.
Fate of Distal Esophageal Segment Following Indirect Surgical Treatment of Congenital Tracheoesophageal Fistula. W. P. Longmire Jr.—p. 279.
Intrathoracic Goiter: Report of Patient Operated on Through Thorax. H. G. Hollenberg.—p. 283.
Esophagotracheal Fistula Due to Nonpenetrating Crushing Injury. H. D. Adams and R. E. Mabley.—p. 290.

Pneumothorax for Early Bronchiectasis.—Hennell suggests as objectives in the treatment of bronchiectasis (1) diminution of the trauma of respiration by decreasing its force or by eliminating it entirely in the diseased portion of the lung; (2) decrease in or elimination of the trauma of cough; (3) counteraction of the increased pull on the diseased bronchi because of a lowered intrapleural pressure incidental to atelectasis or fibrosis of the pulmonary parenchyma; (4) elimination of the infection in the lung and bronchi. All patients were successfully treated by the induction of a low tension pneumothorax. There was a selective collapse of the involved portion of the lung; the highly negative intrapleural pressure was brought to an approximately normal level; the cough promptly decreased and then disappeared within one to four weeks; infection subsided promptly and permanently. Pneumothorax therapy should receive first consideration in cases of early bronchiectasis. If judiciously employed, pneumothorax has no mortality, no morbidity and no serious complications. The use of pneumothorax does not preclude the subsequent employment of radical surgical therapy if the pneumothorax is relinquished when success is not achieved in a reasonably short time.

New England Journal of Medicine, Boston

235:239-284 (Aug. 22) 1946

Acute Generalized Miliary Tuberculosis in Adults: Clinicopathologic Study Based on 63 Cases Diagnosed at Autopsy. C. B. Chapman and C. M. Whorton.—p. 239.
Late Results of Femoral Thrombophlebitis and Their Treatment. J. Homans.—p. 249.
*Dextrocardia and Bronchiectasis: Review of Literature and Report of 2 Cases. A. H. Russakoff and H. W. Katz.—p. 253.
Active Immunization. G. Edsall.—p. 256.
Tuberculosis of Bronchus.—p. 275.
Abdominal Pregnancy.—p. 277.

Dextrocardia and Bronchiectasis.—Russakoff and Katz report 2 instances of dextrocardia and bronchiectasis and present evidence that transposition of the viscera is attended by a high incidence of other abnormalities. In reviewing the files of the Mayo Clinic from 1920 through 1941 Olsen found 85 cases of dextrocardia. Of these, 14 were discovered to have an associated bronchiectasis, an incidence of 16 per cent. During this identical period a diagnosis of bronchiectasis was made on less than 0.5 per cent of all other patients investigated. The authors consider that the coincidence of bronchiectasis with visceral transposition is unusually high. They think that this puts physicians under obligation to adopt a somewhat different attitude toward cases of dextrocardia. It is no longer sufficient to inform the patient of transposition of the abdominal viscera in cases of

situs inversus to avert the catastrophes of improperly interpreted contralateral abdominal manifestations. Besides a search for other anomalies, a thorough investigation of the upper respiratory system and the bronchopulmonary tree should be an integral part of a complete clinical study.

New York State Journal of Medicine, New York

46:1759-1870 (Aug. 15) 1946

Clinical Comparison of Cardiac Glycosides. A. C. DeGraff.—p. 1803.
Primary Atypical Pneumonia. F. L. Horsfall Jr.—p. 1810.
Endocrine Features and Treatment of Chronic Cystic Mastitis and Their Relation to Infertility. J. H. Morton.—p. 1815.
Practical Considerations in Conservative Treatment of Thrombophlebitis. I. S. Wright.—p. 1819.
Surgical Management of Thrombosis and Thrombophlebitis, with Discussion of Vein Resection. G. H. Pratt.—p. 1825.

46:1871-1982 (Sept. 1) 1946

Evaluation of Cardiac Patients for Surgery. D. Scherf.—p. 1915.
Pentothal Time Quotient: Instructional Aid. R. N. Terry.—p. 1920.
Factors Involved in Choice of Premedication for Anesthesia. M. Lenahan.—p. 1924.
Analysis of Maternal Deaths for Twelve Years in Monroe County, Including Rochester. J. K. Quigley.—p. 1929.

Northwest Medicine, Seattle

45:541-624 (Aug.) 1946

Surgical Management of Acute Massive Hemorrhage from Peptic Ulcer. C. Mathewson Jr. and R. D. Pinkham.—p. 563.
Vascular Complications: Pulmonary Embolism. C. B. Ritchie.—p. 567.
Biochemic Imbalance in Surgery. J. W. Read.—p. 571.

45:625-704 (Sept.) 1946

Treatment of Subacute Bacterial Endocarditis with Penicillin: Report of 3 Cases. R. L. King and R. J. Evoy.—p. 653.
Penicillin in Hordeolosis. A. DeRoetth.—p. 658.
*Salmonella Fever: Report of 5 Cases, 1 Complicated by Cholecystitis, Perforation and Peritonitis with Autopsy Findings. C. E. Bender.—p. 660.
Thrombus in Femoral Vein from Great Saphenous Vein. M. S. Rosenblatt.—p. 665.
*Rabies in Washington State. H. H. Kretzler.—p. 666.

Salmonella Fever.—Bender reports 5 cases belonging to that group of salmonella infections usually classified as enteric fever or salmonella fever seen in an overseas hospital on Luzon, P. I. The epidemiologic aspects appear to be about the same as those observed in typhoid. Salmonella paratyphi A, the etiologic agent in the first 3 cases, is closely related to Salmonella typhi (Eberthella typhosa) both in pathogenicity and in natural distribution. The clinical picture is so similar to typhoid that only a bacteriologic diagnosis can differentiate the two. In the fourth case Salmonella enteritidis was demonstrated and in the fifth case blood cultures were positive for group C Salmonella, type undetermined. Positive blood cultures were obtained in all 5 cases. The vagaries of the infection are illustrated, oscillating from a severe systemic infection with pulmonary involvement, cholecystitis and subsequent perforation of the gallbladder to a moderate febrile course with only malaise and headaches. The diagnosis of sporadic cases of salmonella fever necessitates constant awareness of the process with subsequent demonstration of the organisms in the blood, feces or urine. While recognition of the basic etiology will affect the treatment but little, it may prevent unnecessary surgical intervention and is important from the standpoint of isolation precautions.

Rabies in Washington State.—Kretzler reports 8 cases of human rabies that have occurred in the state of Washington. The Pasteur treatment is not wholly devoid of danger. With present laboratory methods the danger of contracting rabies from the vaccine is remote but is always present. Figures regarding the incidence of this complication vary greatly. Of the 8 cases reported here paralysis developed in 3. Recovery occurred in 2 of these without residual paralysis, but the third patient still had much spasticity of the lower extremities two years after onset and still needed crutches or braces to enable him to walk. Age seems to be one of the factors that influences the likelihood of paralysis, as it is rarely seen in children. The more intense the treatment, the more likely is the development of paralysis. Vaccination with the dried cord, the original Pasteur method, results in the greatest incidence of paralysis. The cerebral substance of the rabid animal rather than the cord substance was held by some to be responsible for the complication.

Philippine Medical Association Journal, Manila

22:145-188 (April) 1946

Observations and Problems in Tuberculosis in City of Manila Before, During and After the Japanese Occupation. S. A. Francisco and C. Ongpin.—p. 145.
*Cancrum Oris: Observations on Its Incidence and Treatment. A. V. Tupas and A. P. Jongco.—p. 153.
Practical Considerations in Refraction. F. Nicolas-Fernando.—p. 159.
Modified Field Stain for Rapid Staining of Thick and Thin Blood Smears. T. P. Pesigan and E. Y. Garcia.—p. 165.

Cancrum Oris.—Tupas and Jongco say that cancrum oris, also known as noma or gangrenous stomatitis, showed a rise in frequency during the later years of the Japanese occupation and decreased again in 1946. They think that this can be attributed to the scarcity of food and to poor hygienic and living conditions prevailing during the period of occupation. They review observations on 15 cases of cancrum oris seen in the course of one year. Only 2 of the patients died. This mortality rate of less than 14 per cent is a great improvement over mortality rates of from 70 to 100 per cent given in the earlier reports. The author ascribes these favorable results to the combined use of sulfonamides and penicillin. The mouth was first cleansed with an antiseptic solution, usually dilute potassium permanganate; sulfathiazole or sulfadiazine powder was applied locally to the lesions. In addition, 8 patients received either sulfathiazole or sulfadiazine by mouth. Seven patients were given sulfathiazole or sulfadiazine by mouth and penicillin intramuscularly. The dose of penicillin varied from 100,000 to 250,000 units daily. All of the 7 patients who received sulfonamides and penicillin recovered.

Psychosomatic Medicine, Baltimore

8:227-292 (July-Aug.) 1946

Studies on Headache: Mechanisms of Chronic Posttraumatic Headache. D. J. Simons and H. G. Wolff.—p. 227.
New Psychiatric Rating Scale. W. Malamud, H. Hoagland and I. C. Kaufman.—p. 243.
Changes in Electroencephalogram and in Excretion of 17-Ketosteroids Accompanying Electroshock Therapy of Agitated Depression. H. Hoagland, W. Malamud, I. Kaufman and G. Pincus.—p. 246.
Concept of Disease. C. A. Seguin.—p. 252.
Analysis of Neuroses Developing After Combat in 4 Individuals with Outstanding Combat Records. S. P. Hunt.—p. 258.

Review of Gastroenterology, New York

13:267-346 (July-Aug.) 1946

Dietotherapy in Gastrointestinal Diseases. E. Foldes.—p. 283.
Diverticulitis of Colon. L. C. Sanders.—p. 294.
Gastrointestinal Disorders Associated with or Simulated by Lesions of Genitourinary Tract. P. W. Aschner.—p. 298.
Preoperative Management of Segmental Enteritis. H. A. Monat.—p. 302.
Influence of Hyperthyroidism and Hypothyroidism in Clinical and Secretory Functions of Gastric Juice. M. Allende.—p. 303.
*Fluorescein—Aid in Gastroscopy. H. M. Robinson.—p. 303.

Fluorescein in Gastroscopy.—Robinson used fluorescein in outlining ulcers of the gastric mucosa which otherwise might be overlooked or might appear indefinite on gastroscopy. The Schindler procedure was unaltered except that 10 cc. of the fluorescein was permitted to enter the stomach through the Ewald tube after the gastric contents had been drained. The gastroscope was then inserted and the stomach inspected in the usual manner. The author presents the history of 4 cases which are representative of 22 in which this method was used. Fluorescein aids in outlining and demonstrating the ulcer and thus makes possible a more accurate estimate of the diameter of the ulceration.

Rocky Mountain Medical Journal, Denver

43:609-696 (Aug.) 1946

What We Expect from the American Medical Association and Its Council on Medical Service and Public Relations. B. Murphey.—p. 627.
Amebiasis. R. W. Mendelson.—p. 630.
Reconstruction of Shoulder. E. Parnall.—p. 635.
Delayed Rupture of Spleen. J. E. A. Connell.—p. 637.
Coccidioidal Meningitis. J. Dancis and J. C. Nunemaker.—p. 639.
Experimental Electroshock Seizures. J. E. P. Toman and E. A. Swinyard.—p. 642.
Effect of Stilbestrol on Testis and Breast of Patients Treated for Carcinoma of Prostate Gland. M. Schwartz.—p. 643.

United States Naval Med. Bulletin, Washington, D. C.

46:1349-1492 (Sept.) 1946

Pattern of Injuries Produced by Atomic Bombs at Hiroshima and Nagasaki. S. Warren and R. H. Draeger.—p. 1349.
Diagnosis and Treatment of Localized Infections in Hand. W. H. Requarth.—p. 1354.
Role of Psychiatrist in Naval Disciplinary Barracks. G. E. Gardner. —p. 1368.
Condition Simulating Appendicitis Following Cholera Vaccine Inoculation. L. K. Woodward.—p. 1377.
Eye Injuries in Amphibious Warfare. S. S. McNair.—p. 1379.
X-Ray Darkroom Training as Adjunct to Rehabilitation of Blind. R. G. Gerry and Faith C. Kock.—p. 1382.
Mobile Surgical Unit in Combat Area. W. L. Mersheimer, R. G. Allen, J. W. Stutzman, W. E. George and R. R. Schubert.—p. 1389.
Isolation and Identification of Enteric Pathogens at Naval Base in North Africa. E. A. Fullgrabe and F. A. Levant.—p. 1398.
Value of Social Service History in Detection of Those Psychiatrically Unsuited for Military Service: Study of 500 Enlisted Men. O. A. Will Jr.—p. 1403.
Cancer Problem in Navy. J. H. Farrow.—p. 1408.
Sulfadiazine and Penicillin in Treatment of Scarlet Fever. S. Candel and W. B. Burwell.—p. 1423.
Penicillin-Sterile Empyema. A. B. McGraw and H. C. Jackson.—p. 1429.
Treatment of Impetigo at Tropical Base. W. B. Brett.—p. 1439.
Pilot Staleness. Marion M. Kalez and R. C. Hovde.—p. 1441.
Surgical Technic for Facial Lacerations. K. M. Vander Velde.—p. 1451.
Notes on Biopsy, with Special Reference to Its Use and Misuse. D. A. Wood and S. F. Thomas.—p. 1453.

West Virginia Medical Journal, Charleston

42:195-216 (Aug.) 1946

*Anemias Associated with Nutritional Disorders. C. F. Vilter and T. D. Spies.—p. 195.
Twins, One Macerated, Retained; the Other, Normal Delivery at Term: Case. A. P. Hudgins.—p. 200.
Role of General Practitioner in Tuberculosis Control. R. L. Smith. —p. 201.
Intracerebral Concussion Hemorrhages: Report of Case with Autopsy. J. F. Carr and S. Werthammer.—p. 205.
Surgical Approach to Posterosuperior Mediastinum. J. S. Gaynor and J. R. Caldwell.—p. 208.

42:217-240 (Sept.) 1946

Place of Penicillin in Treatment of Syphilis. W. M. Sheppe.—p. 217.
Evolution of Art of Medicine. J. M. Hutcheson.—p. 224.
Abnormal Physiology of Congestive Heart Failure. R. M. Sonneborn. —p. 229.

Anemias Associated with Nutritional Disorders.—All morphologic types of anemia are found in patients with nutritive failure. Some of these result from an inadequate intake in specific nutrients. A deficiency in extrinsic factor results in macrocytic anemia, of iron in microcytic anemia, and occasionally of ascorbic acid or other factors in normocytic anemia. Among patients with microcytic anemia Vilter and Spies detected a considerable number, all female, who seemed to have the Plummer-Vinson syndrome, or sideropenic dysphagia. These patients, in addition to evident pallor, complained of burning of the tongue and difficulty in swallowing. Some had been grinding their food for years. The tongue usually showed atrophy of the papillae and appeared smooth, pale and glistening. Sometimes there was an associated cheilosis or angular stomatitis. Anorexia, flatulence and constipation were usual. Spoon nails were occasionally observed and also a spotty but coalescent brown pigmentation over the face. Fluoroscopic studies of the upper part of the esophagus frequently revealed a semilunar membrane partially obstructing the lumen and an adjacent narrowing of the esophagus. Hypochlorhydria was usual in patients with anemia and dysphagia. There are two theories about this syndrome. On the one hand the dysphagia can so alter the dietary that there is iron deficiency and anemia develops; on the other, it is possible that the alterations in the esophagus are secondary to the anemia or the iron deficiency. Iron alone is effective in this microcytic, hypochromic anemia. Liver factor deficiency (macrocytic anemia) may be treated with liver extract or synthetic folic acid, iron deficiency with ferrous compounds and the anemia of scurvy with ascorbic acid. Therapeutic combinations of these specific substances for the treatment of anemias are economically wasteful and have been used only as the result of misconceived advertising and indifference in diagnosis.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Pathology and Bacteriology, Edinburgh

58:157-324 (April) 1946. **Partial Index**

*Syndrome of Leukanemia: Report of Case. H. Foy, A. Kondi and J. F. Murray.—p. 157.
Relative Susceptibility to Phagocytosis of Gravis and Mitis Types of Corynebacterium Diphtheriae. Jean Orr-Ewing.—p. 167.
Relapsing Febrile Nodular Inflammation of Adipose Tissue (Weber-Christian Syndrome): Report of Case with Autopsy. H. Ungar. —p. 175.
Substance in Human Serum Inhibiting Staphylocoagulase. I. Lominski and G. B. S. Roberts.—p. 187.
*Thrombosis as Factor in Pathogenesis of Coronary Atherosclerosis. J. B. Duguid.—p. 207.
Experimental Study of Some Effects of Acute Anhydremia. G. R. Cameron, F. Burgess and V. Trenwith.—p. 213.
ABO Blood Groups in United Kingdom: Frequencies Based on Very Large Sample. Aileen M. Dobson and Elizabeth W. Ikin.—p. 221.
Collagenase (κ Toxin) of Clostridium Welchi Type A. C. L. Oakley, G. Harriet Warrack and W. E. van Heyningen.—p. 229.
Laboratory Findings in Clinical Dysentery in Middle East Force Between August 1940 and June 1943. J. S. K. Boyd.—p. 237.
Two Cases of Multiple Myeloma (Plasmocytoma) with Secondary Deposits in Dura Mater. Elizabeth Armstrong, J. S. Faulds and M. J. Stewart.—p. 243.
Skin and Nose Carriage of Bacteriophage Types of Staphylococcus Aureus. R. E. O. Williams.—p. 259.
Frequencies of Bacterial Subtypes in Carrier Community and Their Significance. A. A. Miles.—p. 269.

Leukanemia.—Foy and his associates report the occurrence in a woman aged 24 of a condition which corresponds to Leube's original description of the syndrome of leukanemia and which raises questions relating to the maturation of the erythroid and myeloid cells. Hematologic, clinical and postmortem aspects are described in detail. The disorder commenced as a typical macrocytic anemia, with Ehrlich's megaloblasts and giant stab cells in the sternal marrow. Free acid was present in the gastric juice after histamine. In the later stages of the disease the blood became leukemic, with 30,000 to 189,000 white cells, 80 to 90 per cent of which were myeloblasts; some paramyeloblasts were present which are regarded as pathognomonic of the myeloblastic leukemias. It is suggested that the red and white cell changes which occur in leukanemia are due to a maturation defect in the stem cell (hemocytoblast) which affects both the erythroid and the myeloid series, and that the defect may be due to the absence of some unknown factors necessary for the proper maturation of the hemocytoblast and the orderly formation and development of both red and white cells.

Thrombosis and Atherosclerosis.—Duguid states that in his pathology classes sections of a thrombosed coronary artery were used to illustrate the process of canalization. The artery, which had an organized thrombus with many channels running through it, provided a large number of sections, until a point was reached at which the formation changed. Instead of many channels there was now a single lumen surrounded by a greatly thickened wall in which were foci of fatty degeneration. The picture had changed from thrombosis to atherosclerosis. In order to see how this had come about, the sections were examined in serial order, whereupon it was found that the thrombosis was not limited to the region in which there was canalization but extended farther along the vessel in the form of a thick inner lining which, being organized and adherent, had the appearance of an intimal overgrowth. Frozen sections from 26 cases of this condition showing organization of coronary thrombosis suggest that many of the lesions classified as atherosclerosis are arterial thrombi which, by the ordinary process of organization, have been transformed into fibrous thickenings. Red thrombi are prone to softening with fatty degeneration, and many of the "atheromatous" patches found in arterial thickenings appear to be the result of this process.

Tubercle, London

27:105-126 (Aug.) 1946

Indolent Tuberculosis. S. R. Gloyne.—p. 106.
Management of Pneumoperitoneum Therapy and Peritoneoscopy. F. S. Hawkins and G. O. Thomas.—p. 109.
National Scheme for Rehabilitation of the Tuberculous. F. R. G. Heaf, P. Edwards, J. B. McDougall and A. C. Tibbits.—p. 116.

Schweizerische medizinische Wochenschrift, Basel

76:551-574 (June 22) 1946

Success and Experience with 25 Cases of Phrenicotomy Combined with Pneumoperitoneum in Exudative Tuberculous Pleurisy. R. Rosenfeld. —p. 551.
*Hepatodiaphragmatic Interposition of Colon (Chilaiditi Symptom). O. Hubacher.—p. 554.
Furan-2,5-Dicarbonic Acid, Additional Constituent of Human Urine. B. Cagianut.—p. 559.
Treatment for Undescended Testis with Testosterone Propionate. V. Kafka.—p. 561.
Pediatric Experiences After Period of Siege and Hunger in Budapest. S. Hecht.—p. 563.

Hepatodiaphragmatic Interposition of Colon.—Out of 20,000 roentgenoscopies in school children, army inductees and factory workers, Hubacher observed 17 patients (0.85 per thousand) with hepatodiaphragmatic interposition of the colon. This condition was also observed in 5 of 5,000 cases (1 per thousand) in which chest roentgenograms were made. Ten cases of hepatodiaphragmatic interposition of the colon were observed among 1,000 roentgenoscopies which were performed in infirmaries for the insane. Reports of 22 additional cases in persons between the ages of 11 and 86 years are presented. Hepatodiaphragmatic interposition of the colon occurs more frequently than would appear from the European literature. Men are more frequently affected than women. In 21 of the 22 cases the condition was congenital and in only 1 case was it acquired. In only a few cases the condition may be a sequel to a pathologic condition in the abdomen or thorax, but causal relationship between hepatodiaphragmatic interposition of the colon and other clinical symptoms, such as subileus, chronic constipation, upward displacement of diaphragm and transverse position of the heart is possible. Diseases of the myocardium, of the coronary arteries and of the aorta, often associated with hepatodiaphragmatic interposition, may have some relationship to this condition. Contrary to the statements in the literaure, posterior interposition of the colon was observed three times as often as the anterior interposition. Chest roentgenoscopy is the diagnostic method of choice in cases of persistently displaced hepatic flexure and in cases with constant gas distention in the large intestine.

Revista Clínica Española, Madrid

21:283-378 (May 31) 1946

*Lipemia in Psoriasis. H. J. Castro-Mendoza and J. Gómez Orbaneja. —p. 296.
Action of Nicotinic Acid on Glycemia in Normal Persons and in Patients with Pellagra and Other Pathologic Conditions. M. Diaz-Rubio, E. Monsálvez and J. M. Masaguer.—p. 299.
Human Bronchopulmonary Nematodes and Clinical Aspects of Bronchopulmonary Nematodiasis. C. R. López-Neyra and N. González de Vega.—p. 304.
Functional Exploration of Cardiocirculatory System in Patients with Pulmonary Tuberculosis: II. Cardiocirculatory Changes in Patients with Pulmonary Tuberculosis Not Given Collapse Therapy. J. Múgica Echarte.—p. 313.
Value of Histologic and Hormonal Method in Diagnosis of Malignant Mole and of Chorioepithelioma. V. Beato.—p. 322.

Lipemia in Psoriasis.—Castro-Mendoza and Gómez Orbaneja investigated the fat content of the blood of 36 patients with psoriasis. In 33 of these patients they detected no changes in the total lipid content, in the total and free cholesterol or in the behavior of the cholinesterase of Sperry. The pathogenesis of psoriasis remains unexplained. It cannot be attributed to disturbances of the fat metabolism reflected in the blood.

Revista de la San. Militar, Buenos Aires

45:551-678 (May) 1946. **Partial Index**

*Prevention of Shock by Vitamin C. Christiane C. D. Pasqualini. —p. 554.

Prevention of Shock by Vitamin C.—Pasqualini bled guinea pigs to the appearance of collapse. The blood was collected in a syringe containing heparin solution. As soon as collapse appeared, 25 per cent of the volume of blood was reinjected. Blood pressure rose for fifteen minutes and again fell. The remaining 75 per cent of heparinized blood was immediately reinjected. Blood pressure rapidly rose, but shortly after it fell and the animals died in about four hours. The experiment was repeated in groups 2 and 3 of animals which were given prior to being bled an intraperitoneal injection of 200 mg. of vitamin C (group 2) or an equivalent volume of isotonic solution of sodium chloride. One out of 18 animals in the vitamin C experiment and 15 out of 17 controls died from hemorrhagic shock. The animal which had vitamin C and died survived for twenty hours. The controls died within a few hours. The 17 survivors in the vitamin C group returned to normal health for an indefinite period.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:559-598 (June 1) 1946. **Partial Index**

Surgical Treatment of Open Ductus Arteriosus. L. D. Eerland. —p. 560.
*Influence of War Conditions on Incidence of Tuberculosis Caused by Bovine Tubercle Bacillus in Amsterdam. A. Charlotte Ruys.—p. 564.
Liver Metabolism in Connection with Cancer Problem. W. A. G. van Everdingen.—p. 567.
Diphtheric Stomatitis and Gingivitis in Infants. G. J. van Lockeren Campagne.—p. 571.
Combined Penicillin and Sulfonamide Therapy in Pneumococcic Meningitis. A. van der Sar.—p. 572.
Observations on Typhus Epidemic in 1945. F. L. J. Jordan and K. Hazenberg.—p. 575.
Kyphosis in Tetanus. W. T. Snoek and N. Schulte.—p. 580.

Influence of War Conditions on Incidence of Tuberculosis.—Ruys says that before the war infection with the bovine type of tuberculosis was comparatively frequent even in the cities of the Netherlands. Investigations covering the period between 1933 and 1938 revealed that in cities with over 100,000 inhabitants bovine tuberculosis accounted for 9 per cent and other forms of tuberculosis for 21 per cent of the pulmonary disorders among children under 15 years of age. For adults the corresponding figures were 1 per cent and 20 per cent respectively. After 1940 the conditions changed. As nutrition became steadily poorer, tuberculosis increased in severity and extent. Isolation in sanatoriums became impossible in many cases of open tuberculosis, and chances of aerogenic infection with the human type of tubercle bacilli increased greatly. Since 1940 the milk in the large cities has been pasteurized chiefly to standardize the fat content, which has become steadily less, adults receiving only skim milk and finally no milk at all. A table comparing the incidence of new cases of tuberculosis before and during the war in Amsterdam reveals a great increase among adults during the period of poor nutrition. However, a table listing the incidence of bovine and human infections in children before and during the war shows that whereas before the war the incidence of bovine tuberculosis was 9.6 per cent, during the war years it was only 1.8 per cent.

90:679-718 (June 22) 1946. **Partial Index**

Disturbances in Central Temperature Regulation. B. Brouwer.—p. 681.
Hepatitis with Manifestations of Hepatic Cirrhosis in a Nursling. A. van Westrienen.—p. 684.
Treatment of Pneumococcic Meningitis in Infants. W. K. Dicke. —p. 687.
Bleeding from Nose, Mouth and Anus. J. C. Schippers.—p. 688.
Vis Medicatrix Naturae. G. J. Huët.—p. 691.
Clinical Aspects of "Pancreatic Cirrhosis" in Infants. Ada Middelhoven.—p. 693.
Brachyesophageal Diaphragmatic Hiatus Hernia. R. P. van de Kasteele. —p. 696.
*Familial Cirrhosis of Liver and Osteoporosis. A. G. Schoo.—p. 700.
Gargoylism. H. M. Brouwer-Frommann.—p. 705.

Familial Cirrhosis of Liver and Osteoporosis.—Schoo observed a girl aged 6 years who had an enlarged liver and in whom biopsy indicated cirrhosis. She also had glycosuria, polydipsia and a skeletal disorder resembling rickets. For the last six months she exhibited pain to touch, and walking was impossible. Two sisters of this girl had died of a similar disorder, whereas a brother was healthy. Gerstenberger in 1933 described the concurrence of hepatic cirrhosis and rickets in 3 children. In the case of "rickets" that accompanies hepatic cirrhosis, vitamin D must be administered in large doses. In the reported case some improvement was observed when an intramuscular injection of 600,000 international units was given. Improvement progressed after a second and third injection of this dose. Pain in the legs persisted; the girl could sit but not stand; the weight decreased further, and it is likely that the general condition will deteriorate as the result of the hepatic cirrhosis.

Book Notices

Job Placement of the Physically Handicapped. By Clark D. Bridges, Director of Conservation Services, Zurich Insurance Companies, Chicago. Cloth. Price, $3.50. Pp. 329, with illustrations. New York & London: McGraw-Hill Book Company, Inc., 1946.

This book appears to be a compilation of material from many sources (there are two pages of acknowledgments plus "many others who contributed"). Presentation of the material is brief, graphic and simple. The graphic display of job analysis and hazard is excellent. The simpleness of the anatomic and medical discussions is astounding; in fact it rivals the old time "doctor books" that were common during the last century. Surely employers who are intelligent enough to operate a large business successfully today can understand a more exact description of medical subjects. The oversimplification in this field is apt to mislead the uninformed reader; also the collection and presentation of this material are arranged for a person who has little or no background to understand the subject most similar to a primer designed for beginners. The placement considerations following the discussions of various diagnoses and material reprinted in appendixes will be of interest to physicians who are treating workers, but surely industrial physicians are already familiar with this material.

Prescribing Occupational Therapy. By William Rush Dunton, Jr., M.D. Second edition. Fabrikoid. Price, $2.50. Pp. 151. Springfield, Illinois: Charles C Thomas, 1945.

This edition continues to emphasize the value to patients of the effect of sedative work, assignments which need concentration and other general considerations. In fact the emphasis placed on these objectives leaves the reader uninformed about the strides that have been made since the first edition. In the chapter on the significance of occupational therapy a modern book should mention the use of this technic as an aid to diagnosis. Lately several reports have indicated that the occupational therapist can be used in diagnostic psychiatry as an aid in discovering the underlying cause for a particular individual's psychosis. Orthopedic surgery can use this "therapist" as an aid in diagnosing the present capacity of muscles and joints as well as prognostication based on response of injured parts to graded work load. Other examples of the diagnostic aids furnished by correct use of occupational therapy could be described, and these should be in the chapter on significance.

Specific improvements have also been made in the field of therapy of mental, orthopedic and convalescing patients, yet these are not mentioned in this portion of the book. In fact the broad principles formerly ascribed to occupational therapy could be undertaken by a poorly trained person. It is necessary to emphasize these newer developments to indicate that the modern occupational therapist needs adequate training before she is entrusted with these responsibilities.

If this edition is designed for physicians there is entirely too much elementary description and classification of mental and physical diseases. There is also a tendency to emphasize the mental conflicts associated with physical disease without equal stress being placed on specific prescriptions designed to cope with the physical handicap. If this book should be supplemented with newer knowledge of occupational therapy it might still be useful for beginning students.

Lectures on Preventive Medicine. By Harvey Sutton, O.B.E., M.D., D.P.H., Professor of Preventive Medicine, Director of School of Public Health and Tropical Medicine, University of Sydney, Sydney. Cloth. Price, 27 s. 6d. Pp. 658, with illustrations. Sydney: Consolidated Press, Ltd., 1944.

Easy informality combined with a scholarly presentation make these collected lectures interesting reading. The subject is considered under four main headings, the first of which is human life history. In this, eight chief subjects, including heredity and genetics, maternal and infant mortality, child welfare, industrial hygiene and personal and mental hygiene, are presented with numerous subheadings. In the next section environmental influences are discussed. Ventilation, heating, water, waste disposal and housing are considered, but the most interesting presentation is that under the heading of vitamins. This is a comprehensive discussion, giving in great detail all established facts regarding these elements. Proper balance is maintained by consideration of foods as the basic source of vitamins and emphasis on the importance of an adequate, well rounded diet. A lecture on alcohol states that "alcohol is a third-rate food, a second-rate drug and a first-rate poison," and this analysis is then discussed in detail. The third section, on communicable diseases, contains lectures dealing with avenues of infection, carriers, animal diseases, vectors, disinfection and infectious diseases. Following the fourth section, a brief consideration of public health administration, there is an appendix containing details on construction of a pedigree chart, vaccination against smallpox, tabular data of stages of growth including the now less widely used height-weight charts, and excellent material on milk and meat inspection. These lectures, though slanted somewhat for the Australian point of view, are of considerable general interest.

Growth and Development of the Young Child. By Winifred Rand, A.B., R.N., Mary E. Sweeny, A.M., M.S., and E. Lee Vincent, Ph.D. Fourth edition. Cloth. Price, $3. Pp. 481, with 63 illustrations. Philadelphia & London: W. B. Saunders Company, 1946.

With the publication of this edition the authors have brought their textbook well up to date and have done extremely well in orienting their book to modern ideas about child growth and development. While it emphasizes mental and emotional development rather than the purely physical, the book does contain excellent chapters on physical growth. Emphasis is placed on the preschool years rather than on infancy, although data on this period are included. In appraising the book, one is impressed with the fact that, while it is not the ultimate answer to our crying need for a standard textbook on human growth and development, it is as good an attempt at fulfilling such a need as has yet been published. No one or two or three people could possibily write a complete treatise on this all inclusive subject. The final answer must be a compilation of the work of many capable investigators, knit together by some experienced editor. The publisher has done a good job of printing. Illustrations are ample and there is a good index. A medical man reading this book will find many places where the information is perhaps not as complete as he would desire, but the information given is accurate. The average doctor will find also a wealth of material about which he is uninformed and which will be extremely practical to use in his daily contacts with parents and children. The bibliography is excellent and will assist him if he cares to delve deeper into subjects which are too superficially handled. The book should be useful in planning courses in growth and development for students and as a reference; but its greatest value will lie in its valiant attempt to relate the many facts of growth to the problems of actual living with children.

Music in Hospitals. By Willem van de Wall, Head, Adult Education Section, Education Branch, Internal Affairs and Communications Division Office of Military Government for Germany, U. S. Paper. Price, $1. Pp. 86, with 1 illustration. New York: Russell Sage Foundation, 1946.

Music in Medicine. By Sidney Licht, M.D. Cloth. Price, $3. Pp. 132. Boston, Massachusetts: New England Conservatory of Music, 1946.

Both these books on "music therapy" are apparently attempts to justify the use of music in the program of care of patients and to familiarize musicians with the organization developed for this purpose. One author has had considerable experience as an educator in the study of the psychology of music. The other is a physician who overlooked the only scientific article published on this subject by the American Medical Association.

Both booklets emphasize the necessity of having music prescribed by physicians who are responsible for the patient's care. Both fail to mention that it is only in the group of patients who remain in hospitals for long periods that there is even a chance for the functional use of music. General hospitals admit about 90 per cent of all patients, and the average stay for these patients in nonfederal general hospitals is only twelve days. Mental, tuberculous, cardiac and reconstructive orthopedic patients are hospitalized for longer periods, but general statements regarding music for these types of patients cannot give musicians or the public a clear understanding of the limitations of music for all types of patients. Little or no functional value of music can

be expected for patients whose period of hospital stay is short, and therefore the only other value is diversional or for entertainment. It is unlikely that general hospitals will be interested in supplying personnel for the entertainment of their patients.

The functional approach of music should be under the direction of a qualified and experienced occupational therapist rather than musicians. It is only the adequately trained and experienced therapist who will have the proper knowledge of anatomy, physiology, psychiatry and psychology used in making music a functional type of treatment. Such a philosophy is implied by both authors but is not stated. Then, as music becomes a responsibility of the occupational therapist, she may request musicians to aid but never to assume control. Furthermore, music has for years been considered as an occupational therapy modality in both functional and diversional recreation. The functional use of music as an art or craft in occupational therapy has already received recognition by the American Medical Association in Music as a Modality of Occupational Therapy, by Arthur Fultz (*War Med.* **5**:193 [March] 1944).

Compulsion: The Key to Collectivism: A Treatise on and Evidence of Attempts to Foist on the American People Compulsory Health Insurance, and Explanation of the Implications Involved. Paper. Pp. 192, with illustrations. The National Physicians Committee for the Extension of Medical Service, Inc., 75 E. Wacker Drive, Chicago 1, 1946.

This study presents a readable and instructive account of the forces behind the agitation for a system of federally controlled compulsory sickness insurance in the United States and the technics employed by the agitators to gain their objective. Scattered throughout the pages of this brochure are pertinent excerpts from the testimony presented before the Senate Committee on Education and Labor in connection with the extended hearings on the Wagner-Murray-Dingell bill. Section B of the study is devoted exclusively to such testimony and to the ten point program of the American Medical Association. The chapter headings of section A are indicative of their contents: The Wagner-Murray-Dingell Bills and their Historical Background, the Bureaucratic Propaganda Front, Government Propaganda for Political Medicine, The Misused Draft Rejection Statistics, Organized Medicine's Efforts for Better Medical Care, The Why of Physician Opposition, Probing for Facts, An Elder Statesman Testifies, and Compulsion the Key to Collectivism. Every physician should possess and absorb the contents of this study.

Physicans' and Dentists' Assistants: The Outlook for Women in Occupations in the Medical and Other Health Services. United States Department of Labor, Women's Bureau, Bulletin 203, Number 11. Paper. Price, 10 cents. Pp. 15, with 4 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1946.

Another excellent presentation of material for vocational guidance of women can be found in this pamphlet. This is the eleventh pamphlet in the series entitled "The Outlook for Women in Occupations in the Medical and Other Health Services." The entire series should be made part of the armamentarium of every vocational counselor. Mrs. Marguerite Zapoleon has followed an outline for this booklet similar to the arrangement of the preceding publications. Pertinent information is given, changes that have occurred as a result of the war are emphasized and an attempt is made to forecast some of the future developments. A practical approach is used by describing the earning power, hours of employment and the amount of advancement that can be expected. Appendix A, in each issue of the series, summarizes the important facts in tabular form.

Penicillin: Its Practical Application. Under the General Editorship of Professor Sir Alexander Fleming, M.B., B.S, F.R.C.P., Professor of Bacteriology in the University of London, St. Mary's Hospital, London. Cloth. Price, $7. Pp. 380, with 59 illustrations. Philadelphia: Blakiston Company, 1946.

This book, prepared under the editorship of Sir Alexander Fleming, is a comprehensive and authoritative compendium of our present knowledge of penicillin in all its aspects. Although the twenty-eight contributors are British, the American contributions to penicillin therapy are not slighted. The value of the book is enhanced because of its complete presentation of all the British work on this drug, much of which is not familiar to American physicians.

The first part of the book deals with the history, chemistry, manufacture, pharmacy, pharmacology and bacteriology of penicillin. These chapters are well written and of interest even to the general practitioner. The chapters on chemistry and pharmacology are particularly good, although the book was prepared before the recent information on the pharmacologic differences between the various penicillin fractions was available. The twenty-one chapters on the clinical use of penicillin are exceedingly well done and present a conservative point of view on the application of penicillin to a wide variety of bacterial infections commonly encountered in medical practice. The use of penicillin in the various medical and surgical specialties is presented authoritatively, and adjuvant medical and surgical treatment is stressed.

Only minor criticisms may be offered of this textbook. Mention is not made of the various chemical methods of penicillin assay which have been under study for the past two years. Although a comprehensive discussion of penicillinase is included, mention is not made of the use of this enzyme to distinguish between penicillin and nonspecific inhibitory substances in serum when one is performing assays on blood specimens. Considerable emphasis is given to pharmaceutic preparations of penicillin, particularly those for local application; this emphasis may lead the less informed physician to use local treatment where better results might be obtained from systemic therapy. The book is well illustrated in the first part, but greater use of illustrations could have been made in the section dealing with the clinical use of the drug. At the end of each chapter an excellent list of references is given, and the index at the end of the book is useful. In common with other British textbooks, the style of writing appears superior to the usual American book. This volume can be recommended to students, general practitioners and specialists without reservation.

The Vitamins in Medicine. By Franklin Bicknell, D.M., M.R.C.P., and Frederick Prescott, M.Sc., Ph.D. A.R.I.C., Clinical Research Director, the Wellcome Foundation, London. Second edition. Fabrikoid. Price, $12. Pp. 916, with 208 illustrations. New York: Grune and Stratton, 1946.

This book is a review and appraisal of our current knowledge of the vitamins, with correlation of their chemistry, physiology, nutritional importance and clinical uses. It may be considered as a source book in that it contains approximately 4,500 references to the literature, and the discussion is extensive and often detailed. Information of this type and scope presumably has not been collected previously in a single work. While the authors have attempted a critical evaluation of the literature, they themselves state that they cannot hope to have avoided errors of judgment in selection and interpretation of the literature. Though critical readers may expect to find a number of interpretations at variance with their own, the book nevertheless is worth while and should serve its purpose well. It should be valuable to any one with a scientific interest in the vitamins. It is profusely illustrated, and the illustrations are clear and well chosen. Comment on specific phases is not attempted because of the great variety and extensive ramifications of the subject matter.

The Chemical Composition of Foods. By R. A. McCance and E. M. Widdowson. Medical Research Council, Special Report Series No. 235. Second edition. Fabrikoid. Price, 6s. Pp. 156. London: His Majesty's Stationery Office, 1946.

New analytic data are in constant demand in the rapidly growing science of foods and nutrition. In order to provide investigators, particularly in Great Britain, with such material, analytic work has been sponsored by the council since 1925. In this book some new unpublished data have been added. Old data have been reappraised and revised or deleted as indicated by newer evidence. The present report is intended as a practical handbook which will be useful to investigators in the field. The book consists almost entirely of tables of chemical composition, but the text and bibliography are adequate to permit ready understanding and utilization of the tables. The type is large enough to be easily legible and accurately transcribed. The binding is of good quality.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

MARRIAGE AND EMPLOYMENT IN SERORESISTANT SYPHILIS

To the Editor:—**A man aged 22 was rejected by the army four years ago because of a positive Kahn test (1 plus). His family physician also found a positive serologic test. The patient was hospitalized and given over 2 million units of penicillin, after which the blood Kahn test was still positive. Later he was given "eighty shots" weekly. The Kahn test remained positive. Spinal fluid examination revealed no central nervous system involvement. Serologic tests on other members of the family were negative. The patient does not give history of initial or secondary lesions and has always been in sound health. Because of state laws he is unable to obtain work or to be married because of the positive serologic test. What course should be taken in this case? Has he ever had syphilis? Should he receive further treatment of a more intensive nature? If he is "Wassermann Fast"—what can be done legally to clear him for work and marriage?** Andrew L. Laurie, M.D., Mount Dora, Fla.

ANSWER.—The interpretation of an unexpectedly positive blood serologic test found in the course of routine examination is always a matter of some difficulty. On the basis of general probability, syphilis is much more likely than a biologic false positive serologic test due to some other condition. In general it may be safely assumed that, excluding technical error (which is of course excluded in this case by virtue of the fact that the blood test has been repeatedly positive over a four year period), 95 to 98 per cent or more of all such positive tests are due to syphilis. In this case congenital syphilis seems to be ruled out by the negative examination of members of the family and by the probable absence of stigmas in the patient himself, who is said to be "in sound health."

The fact that the serologic test for syphilis has been positive for four years is strongly in favor of syphilis and strongly against a biologic false positive reaction. The false positive tests due to other conditions usually persist for only a short time. Some further information might have been gained if the tests had been quantitatively titered before any treatment was given since, by and large, false positive tests tend to be lower in titer as contrasted with those due to syphilis.

Has the patient in question ever had the opportunity to acquire syphilis by means of sexual exposure or kissing? Symptomless infection is of course common, either with the complete absence of primary or secondary lesions or with such trivial or insignificant lesions that they are overlooked or misinterpreted by the patient or his physician.

On the basis of the information given the patient may be regarded as having seroresistant latent syphilis and his future course should be guided by the discussion in Moore, J. E.: Seroresistance (Wassermann Fastness) in Syphilis: A Discussion for the Patient (*Am. J. Syph., Gonor. & Ven. Dis.* **30**:125 [March] 1946). The inquirer may obtain a reprint of this paper on request, and both he and the patient should read it.

The inquirer almost certainly misinterprets the state law. Neither in Florida nor in any other state in the Union does a positive blood test bar a person from employment or marriage. The premarital blood test laws provide only that a patient with infectious syphilis may not marry. This patient, with an infection of at least four years' duration and with treatment already amounting to a year and a half of metal chemotherapy plus a course of penicillin, is not infectious. A few unenlightened companies may refuse to employ seropositive persons, but this has nothing to do with the law, and the situation may usually be straightened out either as to marriage or as to employment by a letter from the physician to the appropriate authority describing the situation and certifying as to the patient's noninfectiousness and eligibility for marriage or employment. Legal steps are not necessary.

INFLUENZA VIRUS VACCINE

To the Editor:—**Please discuss the effectiveness of influenza virus vaccine prepared by the calcium phosphate adsorption method and by the red cell elution method.** Robert J. Ralston, M.D., Holyoke, Colo.

ANSWER.—Influenza virus vaccine prepared by adsorption on calcium phosphate should be as effective as that prepared by the red cell elution method if the virus content and stability of the preparation are insured. There is insufficient evidence in the literature to warrant the assumption that there is an adjuvant effect in man.

TREATMENT OF CHARLEYHORSE

To the Editor:—**1. What is the proper treatment for an ordinary charleyhorse or muscle cramp? 2. What is the physiologic explanation of a cramp? 3. Is massage contraindicated?** Harry W. Orris, M.D., Brooklyn.

ANSWER.—1. A charleyhorse is not a muscle cramp. The proper treatment for a charleyhorse, which is an injury to a muscle, usually the quadriceps femoris, depends on when the patient reports for treatment. The injury consists first in a contusion to the muscle by a direct blow, which results in a hematoma as a rule. Later this hematoma may organize into a myositis ossificans, forming soft bone in the muscle. This bony formation tends to grow larger and organize to produce real hard bone.

In the acute stage at the onset of a charleyhorse the leg should be packed in ice about the injured area and held quiet for half an hour to an hour. In the acute stage subsequently for about six weeks (*a*) the leg should be placed at rest in a cast or splint (preferably a cast for "children, athletes and idiots") and kept quiet for ten days, the patient continuing to wear the cast for six weeks; (*b*) diathermy, long wave treatments, should be given daily (the cast may be split for this); (*c*) heat or contrast baths should be given; gentle motion should be given every few days to prevent stiffness. If bone forms and causes pain or loss of function after six weeks, removal of the excess bone should be considered. This should not be done until the bone has become organized and is not growing in size as determined by roentgenograms. For a review of this condition see the article "Myositis Ossificans" by Marcus H. Hobart (*Am. J. Surg.* **34**:227 [Nov.] 1936).

2. The physiologic explanation for a cramp may not be entirely clear. There has probably been an overstimulation of the muscle fibers or the motor nerve, resulting in muscle and nerve fatigue. There may be a reduction in oxygen to the muscle cells and an excess of lactic and other acid or waste products.

3. Massage is contraindicated for a charleyhorse or muscle injury, especially at first, but is not contraindicated for a cramp, which is an entirely different pathologic entity.

ALUM PRECIPITATED AND PLAIN TETANUS TOXOID

To the Editor:—**I am encountering veterans of both the army and navy who are in need of prophylactic measures against tetanus. I am under the impression that men who served with the navy were immunized against tetanus with the alum precipitated toxoid and those of the army with the plain toxoid and that an additional booster dose of either will suffice to protect the patient in the event of an injury. Can a booster dose of the alum precipitated toxoid be given to an army veteran who had the series of plain toxoid? Why is alum precipitated toxoid favored in civilian practice when plain toxoid does not produce a tender lump at the injection site as is seen with the use of alum precipitated toxoid?**

Glenn T. Howard, M.D., Pearsall, Texas.

ANSWER.—The navy has employed alum precipitated tetanus toxoid and the army has used the plain (fluid) tetanus toxoid.

Under ordinary circumstances a booster dose of either plain tetanus toxoid or of alum precipitated tetanus toxoid will suffice to protect a person in case of injury. The two types of tetanus toxoid are interchangeable, since the only difference consists in the presence of alum in the one and its absence in the other.

Because of the great variability in the duration of demonstrable (titrable) antitoxic immunity against tetanus (three or more months to five or more years) it is desirable that recall (booster) injections be administered in the presence of injuries considered likely to lead to the development of clinical tetanus. There are circumstances under which antitetanic serum (passive immunization) has been recommended instead of a booster dose of tetanus toxoid (active immunization). In the presence of serious hemorrhage, poor general health, diseases of a debilitating nature, severe or multiple injuries or delay in the injection of tetanus toxoid, the use of adequate doses of antitetanic serum (10,000 or more units) is justified. There is a definite difference of opinion concerning this particular problem, so that failure to employ tetanus antitoxin under these circumstances cannot be interpreted as an act of negligence.

It is supposed that basic immunity, the ability of the body to respond to a booster dose of tetanus toxoid, is lifelong. The available data indicate that a person will produce tetanus antitoxin in response to a booster dose of tetanus toxoid as long as five to six years after initial immunization with tetanus toxoid. The response is characterized by four features: 1. Acceleration: A high level of antitoxin appears in seven days or less, thus providing adequate immunity in the presence of short incubation periods. 2. Augmentation: The antitoxic level after the booster dose is remarkably increased, sometimes to levels as high as fifty to one hundred times those present at the time of recall injection. 3. Prolongation: The duration of antitoxic immunity is more persistent than that evoked by the previous injections.

4. Facilitation: The body responds to minute doses of tetanus toxoid. Thus, a recall injection of but 0.1 cc. elicits a satisfactory immunologic response. The practical significance of this phenomenon ("hair trigger reaction") resides in the fact that the employment of minute booster doses of tetanus toxoid minimizes the incidence of discomforting local and constitutional reactions among those repeatedly subjected to injuries which require the use of booster injections of tetanus toxoid. However, at present it is customary to employ the volume of tetanus toxoid recommended by the manufacturer.

Although it is the theoretical consensus that alum precipitated tetanus toxoid is antigenically superior to the fluid toxoid, fluid toxoid is a satisfactory immunologic agent, as evidenced by its successful use in the United States Army. Sensitivity reactions are reported to be of lesser incidence and severity with alum precipitated tetanus toxoid than with plain (fluid) toxoid, although adverse reactions are infrequent with the latter. One advantage of alum precipitated tetanus toxoid is that two doses are usually sufficient to induce immunity, whereas three injections of the fluid toxoid are commonly recommended.

Plain tetanus toxoid is now commercially available.

ELECTRIC SHOCK AND VARICOSE VEINS

To the Editor:—**A man received second degree burns of the soles and of the left arm and developed varicose veins of both legs following an electric shock from a 220 volt circuit, 30 amperes. Varicose veins first appeared below both knees from sixty-five to seventy-two hours after the electric shock and have extended upward above the knee on the left leg. Could electric shock from such a circuit, which was severe enough to pull the patient down and require the assistance of fellow employees to break the circuit, be considered a factor in the development of the varicose veins? Available evidence indicates that the man did not have varicose veins prior to the accident.**

Francis E. Sultzman, M.D., Hannibal, Mo.

ANSWER.—There is at least one reported case in which occlusive phlebothrombosis in a leg was thought to have been caused by an electric shock. According to Homans the compensatory dilatation of collateral venous channels following an occlusive phlebothrombosis may lead to permanent varices. Thus the possibility that an electric shock may result in the development of varices cannot be categorically denied.

It is a fact, however, that there is neither experimental nor reliable clinical evidence to indicate that persistent phlebectasia has been caused by electric shock. It is also true that in the case of spontaneous varices the transition from a nonsymptomatic to a symptomatic phase of the disease may be so abrupt that the patient is unaware of his disorder until within a few days of the time that he seeks medical advice.

In view of these facts the existence of a cause and effect relationship between the electric shock and the development of varicose veins in the case described in the query appears to be improbable but not impossible.

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Zehrer, G.: Elektrisches Trauma und Thrombose, *Monatschr. f. Unfallheilk.* **46**: 114, 1939.

Homans, J.: Circulatory Disease of the Extremities, New York, Macmillan Company, 1939, p. 172.

CENTRAL CHOROIDITIS

To the Editor:—**1. Is there any treatment for the visual disturbances in central choroiditis, and why does it occur only at intervals? 2. If there is loss of central vision, is any treatment necessary in cases not due to syphilis? 3. Has undulant fever proved to be a cause of central choroiditis?**

M.D., Arizona.

ANSWER.—1. Central choroiditis is a term rather loosely applied to all sorts of circulatory, inflammatory, degenerative and atrophic changes occurring in the region of the macula. The variety in which visual disturbances come only at intervals is probably due to central angiospastic changes or to the presence of an infective focus occurring intermittently in the presence of ocular tissue allergy. Treatment in the former is directed toward elimination of all toxic factors, a correction of metabolic disorders and study of the reactions of the peripheral circulation with a view to increasing its stability and maintaining a dilatation of the smaller vessels. Intravenous injections of typhoid vaccine (10 to 25 millions) or papaverine hydrochloride ¼ grain (15 mg.) or nicotinic acid by mouth are often effective. Sedatives may help hyperemotional patients. Tobacco and exposure to cold and fatigue should be avoided. In the inflammatory type the most important element in the treatment is to determine and eliminate the etiologic factor. In some instances desensitization to tubercle protein or streptococcus toxin is indicated. In the more chronic stages iodides may aid the healing process. Telescopic lenses may provide reading vision even in some old healed lesions.

2. Even though central vision has been lost, particularly if only unilaterally, every care should be taken that damaging repetitions do not occur.

3. Undulant fever is accepted as a cause.

ALOPECIA AND PREGNANCY

To the Editor:—**A quintipara who has had normal pregnancies and rapid deliveries has lost hair from her head with each pregnancy. At the present time she is nearly bald. In the books available alopecia with pregnancies is not mentioned. What are the prognosis and treatment?**

M.D., Michigan.

ANSWER.—The information furnished is too incomplete to tell what kind of alopecia this woman has. Does hair regrow between pregnancies? Is the hair loss diffuse or in patches? If the latter is the case, then she probably is suffering from alopecia areata. The prognosis is relatively good if she is less than 35 years of age and if the hair has regrown readily before. If the alopecia is of the diffuse variety and has been progressive without attempts of regrowth, then the prognosis is indeed bad. It is most likely that the hair loss is instigated through endocrine changes, probably initiated by the pituitary. Pituitary extract may be of value in certain types of alopecia and may be tried. The patient should be thoroughly studied. Thyroid medication may be indicated. Local therapy will probably not be effective, although ultraviolet exposures to the scalp and stimulating applications may be tried. For the latter the following prescription is useful: tincture of cantharides 8 cc., tincture of capsicum 1 cc., alcohol 45 cc. and rose water to make 150 cc.

OCULAR VERTIGO

To the Editor:—**A woman aged 67 becomes intensely dizzy with a tendency to falling forward whenever she watches passing cars. Complete clinical and laboratory examination have been normal except for hypertension with blood pressure of 190/110 and an irritable colon. Labyrinth studies have been normal. Please discuss the physiologic mechanism of the vertigo in this patient.**

George Vash, M.D., Chester, Mass.

ANSWER.—The patient described in the query seems to have normal physiologic vertigo known as ocular vertigo. This type of vertigo is usually associated with nystagmus and is analogous to the dizziness that appears in many people when they gaze at telegraph posts while on a moving train. There may be another type of vertigo, described by Otfried Foerster of Breslau, due to a lesion of the cerebral cortex with stimulation of the superior lip of the interparietal sulcus of the brain.

FALSE REACTIONS IN TESTING URINE FOR SUGAR

To the Editor:—**What drugs cause false reactions in testing for sugar? How much aspirin will cause it?**

M.D., Illinois.

ANSWER.—None of the drugs usually employed therapeutically, including acetylsalicylic acid, should in themselves produce falsely positive reactions for sugar in urine, although some drugs, such for example as camphor, chloral hydrate, morphine and many aromatic alcohols or phenols, are eliminated as conjugate glucuronates, and the glucuronates reduce the copper reagents. The administration of some drugs also results in a low grade glycosuria. Ether anesthesia causes an increased excretion of ascorbic acid, which reduces the copper reagents, as does homogentisic acid, found in the urine in alkaptonuria.

At the present time Benedict's qualitative reagent (THE JOURNAL, Oct. 7, 1911, p. 1193) is the copper reagent of choice, since it is more specific and sensitive for sugar in urine than the older Fehling's and Haines's solutions and is not reduced by creatinine, uric acid, chloroform or the simple aldehydes.

TREATMENT OF FACIAL ANGIOMAS

To the Editor:—**With regard to the query in The Journal July 6, 1946, page 873, concerning the treatment of facial angiomas in infants, I would protest the answer and advice given. The angioma described will cease growing before the child is 10 months of age, and it will involute spontaneously before the child is 5 or 6 years of age. There is no justification for the treatment of the described angioma. It is regrettable that the majority of dermatologists adhere rigidly to the old concepts of treatment of angiomas. The pediatricians must familiarize themselves with the newer concepts and adopt a more critical attitude toward the diagnosis and treatment of vascular nevi.**

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Bell, Doyne: Some Common Pediatric Procedures, *Brit. M. J.* **2**: 157 (July 29) 1944.

C. Russell Anderson, M.D., Los Angeles.